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ORIGINAL ARTICLES.

THE PARASITIC THEORY OF THE ETIOLOGY OF CARCINOMA.*

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In any discussion on cancer the question of its etiology should always take precedence of that concerning its treatment, since the latter to be both rational and effective should be based upon the former. It is not my purpose at present to consider the numerous theories put forward in time past to explain its essential cause, but rather to invite your attention to a resume of the latest and perhaps most fascinating explanation offered as to the prime cause of this dreadful malady.

Just who is entitled to the credit of having first advanced the hypothesis of its parasitic origin it would be hard to tell, but to two English surgeon pathologists, Hutchinson and Paget, we are largely indebted for having advanced the *a priori* plausibility of such a view. In a memorable address some years ago, the latter called attention to the parasitic origin of most of the xylomata or woody tumors seen on so many trees, and ventured the prediction that an analogous parasitic origin would ere long be determined for many of the tumors met with in the animal kingdom. That we now have a class of infectious granulomata acknowledged by all, is not yet sufficient realization of such a prophecy. Virchow recognized so early as 1847, certain peculiar bodies noted in and between carcinoma cells, which he

then supposed to be evidences of degeneration. Their true nature was not made out until 1888, when they were identified as belonging to the sporozoa, although he himself later (*Virchow's Archiv*, Bd. 33) suggested the possibility of their being psorosperms.

Inasmuch as the present paper deals mainly with these organisms, it will be proper to stop here a moment to rehearse a few statements concerning their nature and place in the animal kingdom.

First of all they are distinctly *not* bacteria which are vegetable organisms, but belong to the *protozoa* or unicellular *animal* forms.

The *Gregarinidae* are included in the sub-order Endoplastica and sub-class Sporozoa, according to Lenckart, and are described as having ovoidal or spheroidal bodies, sometimes with a segmental constriction, occasionally with one end beaked and carrying horny spines. They consist of a dense ectosarc and a softer endosarc, containing an endoplast but no contractile vacuole. They are essentially parasitic. They have no oral aperture nor pseudopodia. They contain granular protoplasm with nucleus and nucleolus, and vary in size even up to a centimeter in diameter. The *Coccidia* form another sub-class of the Sporozoa, are quite similar to the above, but have a micropyle at one end.

According to another classification the Sporozoa or Cytozoa are divided into four sub-classes as follows:

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Gregarinidea (by some held to include the coccidia.)

Coccidiidea or Microsporidia.

Myxosporidia.

Sarcocystidia or Sarcosporidia.

But minutiae of classification aside, it is enough for our present purposes that the bodies in question are exceedingly minute forms of unicellular animal life. In 1878 Rivolta (*Dei parassiti vegetali*, Turin, 1878,) and Bollinger (*Virchow's Archiv.*, Bd. 58,) recognized their parasitic nature and identified them as gregarinae; and they gave to the lesions found in fowl and pigeons which so closely resemble molluscum, the suggestive name *Epithelioma gregarinosum*. In 1880, Nedopil, Herisson and others thought to characterize miliary carcinomatosis as an infectious disease. Neisser, in a study of molluscum contagiosum (*Vierteljahrsschrift f. Dermatol.*, 1888, XV. 553) distinguished between their spores and better developed stages. He only studied them in sections, his culture and inoculation experiments failing. He found them in greatest number in affected tissues, but also in uninjured cells and adjacent tissues.

L. Pfeiffer described, also in 1888, (*Zeitschrift f. Hygiene*, 1888, III., 3 and IV., 442) certain bodies met with in two cases of general carcinosis and one of sarcoma of the breast, and regarded them as belonging to the Sporozoa. He found them in the epithelial cells of a fresh, warm melanotic growth, and studying their developmental stage saw that it resembled closely true spore formation of the micro-sporidia. (See also *Die Protozoen als Krankheitserreger*, Jena, 1890.)

Darier, in 1889, observed certain bodies which he believed to be coccidia in a hitherto undescribed skin disease to which he gave the name *Psoro-spermo-se folliculaire vegetante* (*Annales de dermat. et de syph.*, 1889, No. 7), and later, with Wickham (*Centribl't f. Path. Anat.*, I., 682,) he attributed Paget's disease of the nipple to a coccidium which invades the skin.

It would certainly seem as though, providing Paget's disease of the nipples be a factor in the production of certain mammary cancers and that it be a true psorospermiosis, the best conditions for a study of the parasitic nature of cancer would be met with in cases of this disease.

Hutchinson, Jr., (*Trans. Path. Soc.*,

London, XLI, 1890, 214) and Wickham (*Archives de med. experimentale*, 1890, I., 1; *Annales de dermat. et de syph.*, 1890, I and II) have both studied the matter carefully, the latter with seven cases. Wickham describes three stages of the disease after invasion:—

1. Thickening and disorganization of the epidermis and inflammation of the corium.

2. Elevation of the horny cells, lively escape of leucocytes which crowd aside the epithelial cells, proliferation of the rete mucosum and the epithelium of the sweat, sebaceous and milk glands, and finally extensive infiltration of the cutis.

3. Stage of true carcinomatous growth from both the superficial and glandular epithelium.

In the beginning the parasites appear with or without nuclei, later surround themselves with a double membrane, while the contained protoplasm differentiates itself into a number of granules, and thus is formed what he calls a sporiferous cyst. These he found not only in the epidermis, but also in various gland ducts and in the pearly bodies. This in spite of failure to cultivate or inoculate.

Darier and Wickham did not doubt their parasitic as well as their pathogenic character, and felt that under their influence not only epithelioma but other forms of carcinoma might develop.

Malassez and Albarra found in two epitheliomata of the jaw peculiar bodies having striking resemblances to the coccidia so often found in the livers of rabbits (*Soc. de Biol.*, 1889, Avril), and Vincent had a similar experience (*Annales de micrographic*, 1890, II. p. 10.)

Thoma found in the nuclei of many cancer cells peculiar bodies so different from other human cells that he considered them parasitic and thought they might be encapsulated coccidia (*Fortschrit d. Med.*, 1889, p. 413.)

Sjörbring of Lond., (*Ibid.* p. 529) studied their life history and found free extra-cellular as well as intra-cellular and spore forms, and called attention to their resemblance to the organisms which produce *pebrine* in silkworms. Steinhaus examined thirty cancers from various sources, sometimes finding these bodies, sometimes not, but considered them parasitic when present. (*Virchow's Archiv.*, Bd. 126, p. 533.)

Hacke described, in 1890, four cases of cancer in which he found coccidia in and among the cells, varying in size from two to fifty microns, the smaller intra—the larger extra—cellular, spherical, encapsulated, the capsule very highly refractive. Within the cell they often appeared as in a vacuole, owing to the shrinking of the surrounding protoplasm during hardening. As they grew they seemed often to fill and destroy the cell (*Soc. de Biol.*, 1890, Nov. 8.)

Van Henkelom, of Leyden, studied some two hundred tumors and came to conclusions essentially those of Thoma and Sjöbrink (*Centrblt f. Path. Anat.*, 1890, p. 704.)

But these views were not accepted without lively dispute. Russell, Pifford, Schütz (*Microscopische Carcinombefunde*, Frankfurt, 1890), Török and Tommasoli, among others, after minute study claimed that these so-called coccidia were only altered cells, simple masses of chromatin, products of degeneration, etc. Klebs made implantation experiments without success, and these bodies underwent no change nor increase. Duplay and Cazin finding no such changes as they thought coccidia in their evolution should evince, concluded these bodies to be of degenerative origin and to result not only from cells but from mitoses.

Ribbert made a most exhaustive study (*Deutsche med. Wochschr.*, 1891, p. 1179) of cell inclusions in cancer and concluded that his results did not permit his acceptance of the parasitic theory, and therefore held to the degenerative view of their nature.

Ramsay, Wright (*Centrblt f. Allgem. Path.*, 1890, No. 11) and Russell (*Br. Med. Jour.*, 1890, p. 1297), while not so opposed to the parasitic view, referred these bodies to the saccharomyces. Moreover the latter found among them certain granules which have an affinity for fuchsin, the so called "fuchsine bodies" (fuchsinophile) which are also to be found in other pathological and in normal tissues.

Cornil (*Journal de l'anat et de physiol.*, 1891, No. 1) and Hansemann (*Virchow's Archiv.*, Bd. 123, p. 356, 1890) think it possible to mistake for coccidia or their spores, various stages of karyokinetic cell division.

Strobe (*Ziegler's Beiträge*, 1891, xi,

Hft. 1) and Steinhaus (*Centralblt f. Allgem. Path.* 1891, No. 2) feel compelled to admit the sporozoan nature of these bodies, but are not convinced they are the true cause of cancer. * * * *

Since 1890 scarcely an article has appeared on the subject of cancer bacilli, and the attention of all workers in this field seems to have been concentrated on the sporozoa which are alleged to cause the disease.

Inasmuch as everything now points in their direction, it will be worth while to refer briefly to methods for their detection. Pieces of cancer tissue should be preserved in Flemming's solution, which seems to cause the organisms to appear to better advantage. The stain which gives the best result is the so-called Ehrlich-Biondi triple stain, whose formula is simple but whose happy combination seems difficult. The directions given are to dissolve

Methyl green	0.5 in distilled water.	100,
Acid fuchsin	0.5 " "	40,
Orange	2.0 " "	200;

these solutions to be mixed and filtered before use. Sections are left in it for twelve hours, then washed, dehydrated, cleared and mounted. With this stain the nucleus of the cancer will become green, the protoplasm orange-red; the nucleus of the parasite red and its protoplasm light-blue. Puffer, Walker and many others have not hesitated to pronounce the included bodies to be true parasites. * * *

Herewith is concluded a necessarily incomplete brief summary of our present knowledge bearing on one of the most important topics now or ever before our profession. While the parasitic theory is by no means new, the facts which tend to substantiate it are of very recent discovery; so recent in fact that it would be folly to accept them as all sufficient. Obviously they can but constitute a mere foundation upon which we may hope to build. The other all-important yet subsidiary topics of the geographical distribution of cancer, and the influence of sex, age, part involved, civil and sanitary condition, injury, heredity, state of nutrition, and of preceding benign growth, must be constantly borne in mind. Many apparent contradictions must be explained; many conflicting statements reconciled.

The proper position for the real student, it would seem to me, is in the middle ground between skepticism on the one

hand and credulity on the other, waiting and working for the light that we have great reason to eagerly expect, and probably from the direction indicated in the course of this paper.

For my own part I cannot help feeling that we are on the eve of great discoveries in this matter, partly, perhaps, because I have for years had a growing conviction that cancer—and syphilis too—are parasitic diseases due to either unfamiliar or yet unknown organisms, and that some new

technical method or some new application of old methods would ere long furnish the key to the mystery. Whether we have been recently supplied with this by the investigators quoted above is as yet uncertain, though probable.

How anxiously impatient yet sanguine I am you may better appreciate when you recall that my home is in a limited area where the death rate from cancer is greater than in any other part of our continent.

THE MANAGEMENT OF SUPPURATION COMPLICATING TUBERCULOUS DISEASE OF THE BONES AND JOINTS.*

V. P. GIBNEY, M. D.

From frequent analyses of cases treated in the hospital I do not hesitate to present my views without a statistical backing. The claim is often made by my colleagues in orthopaedic surgery that suppuration can be prevented by the *timely* use of apparatus. At times I have been strongly tempted to make this claim myself. The whole question hinges on what we understand by the term *timely*. It will be readily admitted by medical men as well as surgeons that, if a case of tuberculous bone lesion in the neighborhood of the joint can be recognized very early and before any deformity arises, adequate protection to the joint will certainly contribute largely to the prevention of suppuration. The value of rest to any inflamed tissue has been established too long for any cavil at this late date. A difference of opinion often exists as to what is and what is not absolute rest to a part, one surgeon claiming that the apparatus he employs affords perfect protection even if *absolute* rest is not maintained, while another claims that perfect protection can not be secured unless *absolute* rest is maintained.

Take, for instance, the appliances used in the treatment of tubercular osteitis of the hip, or what is commonly known as "hip disease." The long splint, with which all are familiar and which forms the chief element in the American method of treating the disease, does not absolutely rest the

joint, but permits a small range of motion however snugly applied. The traction employed by means of this apparatus depends largely upon the surgeon himself. Many who use it do not believe that it is possible to get a sufficient amount of traction to separate the articular surfaces, and claim that it gives only a sufficient amount of traction to prevent trauma. On the other hand, there are some who believe that it is possible to make the traction such that the articular surfaces seldom, if ever, came in contact. From a personal knowledge of the manner in which this splint is employed, my own belief is that the protection is seldom perfect, but that it is sufficient to guard the joint against trauma if the surgeon himself looks after the dressings, and makes the parent or nurse acquainted with the principle involved. This means, of course, intelligent co-operation.

The Thomas splint does not make any traction on the joint, but is simply a fixation appliance and must, of necessity, make a lever of the limb. And to do this it is difficult for one to see how the joint can help being injured more or less by contact of articular surfaces. It is claimed that the employment of axillary crutches is sufficient to guard against this evil, yet when one considers how little time during the twenty-four hours the patient is on the axillary crutches, he can readily understand the nature of some of the objections to the apparatus.

The combination of the long splint with

*Read before the New York State Medical Society.

the Thomas apparatus, theoretically, affords absolute rest as well as protection to the joint, and would seem to be all that is desired; yet the difficulty of adjusting, and the confinement of the whole body serve to make such a combination apparatus really of little practical value.

It is nevertheless true that with any of these forms of apparatus mentioned, the large proportion of cases, taken in the early stage and before deformity has arisen, do proceed to a cure without suppuration, and eventually, in many instances with complete restoration of the functions of the joint. On the other hand, it is just as true that there are cases taken in the very early stage, with the most approved forms of apparatus and with the most skillful men in charge of the same, that do go on to suppuration in spite of all we may do. We are in the habit of speaking of such cases as severe from the beginning. We speak of the lesion as a large one, involving three or four centres in the end of the bones and rapidly encroaching one upon the other. Thus much for the prevention of suppuration.

Our knowledge of the nature of tuberculous suppuration in a bone enables us to fix pretty definitely upon the locality, but the location of an abscess is not always a guide to the seat of disease. Small abscesses attended with very little constitutional disturbance one can safely treat expectantly; can treat the joint itself by protective apparatus and look upon the pus collection as of minor importance. In the preantiseptic day surgeons, as a rule the world over, were content to leave bone abscesses alone unless they became acute or very extensive. The surgical rule to *let out pus wherever found* did not apply to cold abscesses, and it was only occasionally that a bold surgeon advocated immediate interference. Since the advent of antiseptics it has been the custom to incise more freely, and there are many surgeons to-day who believe it good practice to operate whenever a pus collection is found. Yet there are a very respectable number, whose experience has been large, who still hesitate to operate unless constitutional symptoms develop.

It may be safely said of the Orthopædic Surgeon that *early interference is exceptional*. It is claimed by some of these gentlemen that adequate protection to the joint limits the suppurative process and

does away with the necessity for incision. A rather extended personal experience has prejudiced me somewhat in favor of the aspiration of small abscesses, without the injection of any fluids or agents. I am satisfied that the percentage of cure is fifty per cent. The results of the introduction of iodoform in the various emulsions has not encouraged me in recommending this procedure. My plan in aspirating is about as follows: Use a good sized sterilized needle; go fearlessly and quickly into the sac, evacuate completely if possible, if not, incompletely; apply over the skin a basket strapping of rubber adhesive plaster—the straps drawn tightly; a roller bandage over this; keep the patient in bed for twenty-four hours with an ice bag over the parts, then let him go about with the apparatus properly adjusted. At the end of a fortnight repeat the operation with same after treatment. From three to six aspirations usually suffice to effect a cure.

Where a cure is not affected in this way I resort to a free incision; expose to view as much of the sac as possible; dissect away or curette with a flush gouge; dry the parts thoroughly with antiseptic gauze; pack lightly with iodoform, dermatol or boracic acid gauze, and over all this a full dressing. Remove the packing in about forty-eight hours; bring the edges of the wound together throughout the greater part of its extent, leaving an opening a half inch in length into which a drainage tube or gauze tent is inserted and redress every three or four days.

My experience in attempting complete removal of the sac and closure for primary union has not been sufficiently encouraging to lead me to speak favorably of this method. In many instances where I have secured primary union, and where the immediate result has been brilliant, the sac has refilled at a later period; I have been compelled to open the wound anew and do a bone operation, either gouging thoroughly or excising.

Where the abscess is in close proximity to the lesion, it is best, in my judgment, to do a bone operation at once, aim to remove the diseased portion and pack the cavity as in an abscess remote from the bone lesion. Roughly speaking, I should say at least fifty per cent. of abscesses opened in the manner above described,

wherein no attempt has been made to treat the bone itself by operative measures, fifty per cent. of these cases, I say, come to the bone operation, generally as a life saving measure.

After all, I am not eager to interfere with these small abscesses, and prefer to keep them under observation, with protective apparatus to the limb, for a long time before interference; and, in a fair proportion of cases, the sac grows smaller or becomes more dependent and opens spontaneously with excellent result. So that I am in the habit of recommending to my class at the Polyclinic non-interference unless the surgeon is fully equipped for the details of antiseptic technique.

In the large multilocular abscesses that I meet for the first time, my plan is to incise at once, reduce the cavity if possible to a sinus or sinuses, establish good drainage, and at a later date attack the bone. If, however, the patient's condition is unfavorable I do not hesitate to attack the bone as soon as I open the abscess. These remarks apply more especially to tubercular disease of the hip-joint, and naturally lead up to the question of excision.

Notwithstanding the abundance of literature, both statistical and clinical, on this subject we are not as yet in possession of sufficient knowledge to enable us to determine when to excise and when not to excise. The final results of this operation, so far as I have been able to understand them, do not encourage me to advocate excision in all cases where extensive abscesses are present. In hospital work I have learned to rely upon the conditions of the patient, upon his behavior under expectant treatment for a while, upon the condition of the urine—that is the persistence of a low specific gravity and upon the probable extent of the disease. The cases most suitable, in my judgment, are those wherein the abscess appears in the gluteal region, is limited to this area and where one can readily get down upon the bone and secure the best drainage. Such cases, as a rule, present on section a limited area of disease, and whether one attempts complete eradication or partial, the results are usually good.

The class of cases that are most obstinate and that cause me to hesitate a long time, are those where the abscess appears in the groin in Scarpa's space, or on the inner side of the thigh. The pus sacs

usually encroach extensively upon the femoral vessels and, as a rule, involve not only the head and neck, but a portion of the shaft. It is next to impossible to remove all the offending material, and very difficult to get healing from the bottom by reason of the number of pockets that have formed in the neighborhood of the joint. In a few instances I have adopted the plan recommended by my friend Dr. Poore, of New York, namely, curetting the shaft of the femur and making a counter-opening above the knee. My results have not been as good as he has obtained and hence the measure has not met with my cordial approval. In a few instances I have curetted the bone without making the counter-opening; have kept the shaft well packed with iodoformized gauze, subsequently with drainage tubes. A small proportion of such cases have done well, and I feel encouraged to continue this procedure.

The class of cases that are suitable for partial arthrectomy and gouging of bone is very small. In a number of instances I have been compelled to follow with a complete excision weeks or months after the partial operation, and my experience, therefore, coincides with that of surgeons who have written upon this subject.

In the management of suppurative disease above the knee joint, I can speak quite confidently of what is known as the expectant plan. That is this: Correct deformity by gradual extension, either in bed with the weight or pulley, or with extension apparatus; aspirate when pus is detected; follow this up by incision if the aspiration fails; drain thoroughly. Follow this procedure up by gouging out the foci of disease, packing from the bottom, and in every instance, if possible, endeavor to preserve the component parts of the joint. All of my operations upon the knee in children are supplemented by protective apparatus and a long course of such treatment. These remarks apply especially to the disease as it occurs in children. In adults I favor excision, rather than a partial or complete arthrectomy.

In suppuration involving the bones of the ankle joint in children, it makes little difference whether one incises abscesses or removes foci of disease in the bone, so far as the ultimate result is concerned. I am convinced, from a long study of these cases, that the rule is a recovery with a

joint practically perfect. In no instance, I am satisfied, is it ever necessary to amputate the leg for disease in adults. Where one can be satisfied that bones within reach are alone involved, then a partial operation with fixation of the joint for many months thereafter does result in a cure. Yet one can never feel satisfied that all of the bones diseased have been reached, and hence the necessity for more stringent measures.

I have said nothing thus far on the tuberculous disease of the bones of the spinal column, but the same treatment is applicable here as in the bones already mentioned. I do believe, if one treats the back with a splint for a long period of time, that the abscess sacs are easily managed and that in a large percentage of cases a cure will result. By splinting the back I mean the continuous and uninterrupted employment of an apparatus that will prevent motion and deformity. It is not sufficient to apply a brace or a jacket that can be removed at will by the parents or friends, for the reason that abuses are bound to occur and disappointment will follow.

In concluding let me summarise as follows:

(1.) Protect the joint about which the bone lesion exists in the early stage and in the later stages, whether the abscess is left alone, aspirated or incised.

(2.) In cases where the suppurative process is confined to a small area, it is good surgery to leave the small abscesses alone if the protective appliance is adequate.

(3.) It is good practice to aspirate where the abscess is in the way of the proper adjustment of apparatus, and by such procedure one may expect good results in at least 50 per cent. of the cases aspirated.

(4.) The simple incision of an abscess dependent upon bone disease depends for good result upon the extent of the bone lesion.

(5.) Excision of the hip is not a measure to be employed in all cases where extensive suppuration exists, but must depend largely upon the condition of the patient and the location and extent of abscesses.

(6.) Expectant treatment for the knee and ankle joint in children yields the best results for life and limb.

(7.) Amputation of the ankle in a child is rarely ever justifiable except when amyloid disease of liver or kidneys threatens or is present; of a hip after a thorough excision has failed.

(8.) The long continued employment of a good fitting splint to the back in Pott's Disease of the spine will yield better results than any operative procedures on the bone with which I am familiar.

CLINICAL LECTURES.

ON CERTAIN ANIMAL EXTRACTS: THEIR MODE OF PREPARATION AND PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS.*

WILLIAM A. HAMMOND, M. D.†

Gentlemen:—I wish I could believe all the pleasant things that my friend, Professor Roosa, has, in the goodness of his heart, just said about me. There are two expressions of his, however, which I know to be true. First, I scarcely need any introduction here, for though I have been

away from you for more than four years, I feel that I am, if only for an hour or so, back among my own people and I experience something of the emotions of the captain who walks the quarter deck of his ship. Second, I am one of the founders of this school. I shall always regard that fact as the most honorable of all the events of my professional life—the one in which I take the most pride. The excellence of the work done here by the faculty and the phenomenal success that has attended

* Lecture delivered at the New York Post-Graduate Medical School and Hospital, January 16th, 1893.

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upon their labors are circumstances of which they may well feel a justifiable elation and in which emotion I claim the right to share.

But I am not here to-day to speak of the triumphs of this school. I want to tell you of some of the work upon which I have been engaged since I left you, and the story will, I think, interest a body of physicians like yourselves who come here to learn new facts and thus to keep abreast with the progress of the age. You remember that about three and a half years ago Dr. Brown-Séquard electrified the medical and non-professional world by announcing that the expressed juice of the testicles of the guinea pig was an agent capable, when injected into the blood, of arresting to some extent the inroads of old age and of curing certain diseases to which mankind is subject. I at once entered upon a series of investigations of the matter, some of the results of which are published in the *New York Medical Journal* for August 13th, 1889. I became convinced that we had in the juice of the organs in question a means of acting upon the body in a manner and to an extent different from that of the effects of any other substance previously known to medical science.

But, though surprising in its action, I found that there were certain practical difficulties in the way of the fresh testicular juice ever becoming of general use in actual practice.

In the first place it had to be used fresh, for if not, there was great danger of a putrefactive process being set up and blood poisoning produced, and this was the result in several cases in which it was used in this country. In large cities there is almost an impossibility of getting the organs in question immediately on their being removed from the animal.

Secondly, it was extremely difficult to filter the thick juice, even when diluted according to Brown-Séquard's directions. Filtering paper would not do, for the morphological constituents passed through and an abscess was very liable to be produced at the point of injection. A porous stone filter absorbed the juice and none of it came through, as there was never a sufficient quantity to saturate the stone and to pass through it. A large amount could not properly be made at one time, as it would not keep, so that it was

necessary at every *séance* to prepare a fresh quantity.

After a time, therefore, during which I did my best with the fresh juice; using for this purpose the testicles of the ram and creating several abscesses with febrile disturbance, I gave up this method and turned my attention to preparing extracts not only of the testicles but of other organs of the body. It would be to some extent instructive to go over my failures, but I have not time for that. I can only on this occasion tell you of my success and the conclusions I have arrived at in regard to the subject. And I shall mainly confine my remarks at present to the consideration of one extract, that of the brain, which for convenience I designate "cerebrine." I will merely say that I have prepared extracts also of the spinal cord,—"medulline;" the testicles,—"testine;" the ovaries,—"ovarine;" the pancreas,—"pancreatine;" the stomach,—"gastatine," and the heart,—"cardine," and that I am nearly ready to give to the profession the results of my observations with these substances. Of course the kidneys and the liver being excretory organs, can not properly be used for the purpose of making extracts to be introduced into the blood. Were we to use them in this manner we should be putting back into the system poisons which it had eliminated, and hence would produce disaster, and perhaps, even death.

The process of preparation of the extract of these several organs, while individually somewhat different, does not materially vary from that used for the brain, which is as follows:

The whole brain of the ox after being thoroughly washed in water acidulated with boric acid, is cut into small pieces in a mincing machine. To one thousand grammes of this substance, placed in a wide-mouth glass-stoppered bottle, I add three thousand cubic centimetres of a mixture consisting of one thousand cubic centimetres each of saturated solution of boric acid in distilled water, pure glycerine and absolute alcohol. This is allowed to stand in a cool place for at least six months, being well shaken or stirred two or three times a day. At the end of this time it is thrown upon a porous stone filter through which it percolates very slowly, requiring about two weeks for entirely passing through. The residue remaining upon

the filter is then enclosed in several layers of aseptic gauze, and subjected to a pressure of over a thousand pounds, the exudate being allowed to fall upon the filter and mixed with a sufficient quantity of the filtrate to cover it. When it has entirely filtered it is thoroughly mixed with the first filtrate and the process is complete.

During the whole of this manipulation the most rigid antiseptic precautions are taken. The vessels and instruments required are kept in boiling water for several minutes and are then washed with saturated solution of boric acid. Bacteria do not form in this mixture under any circumstances, but it is necessary to examine it from time to time microscopically, in order to see that no foreign bodies have accidentally entered. Occasionally, owing to causes which I have not determined, though I think it is due to variations in temperature, the liquid becomes slightly opalescent from the formation of a flocculent precipitate. It sometimes takes place in a portion of the extract kept under apparently identical conditions with other portions that remain perfectly clear. It can be entirely removed by filtration through Swedish filtering paper, previously sterilized, without the filtrate losing anything of its physiological or therapeutic power.

Five minims of this extract diluted at the time of injection with a similar quantity of distilled water constitute a hypodermic dose.

The most notable effects on the human system of a single dose are as follows—though in very strong, robust, and large persons, a somewhat larger dose is required, never, however, exceeding ten minims:

1. The pulse is increased in the course of from five to ten minutes, or even less in some cases, by about twenty beats in a minute, and is rendered stronger and fuller. At the same time there is a feeling of distention in the head, the perspiration is largely increased, the face is slightly flushed, and occasionally there is a mild frontal, vertical, or occipital headache or all combined, lasting, however, only a few minutes.

2. A feeling of exhilaration is experienced which endures for several hours. During this period the mind is more than usually active and more capable of effort. This condition is so well marked that if a

dose be taken about bedtime wakefulness is the result.

3. The quantity of urine excreted is increased, when other things are equal, by from eight to twelve ounces in the twenty-four hours.

4. The expulsive force of the bladder, and the deristaltic action of the intestines are notably augmented, so much so that in elderly persons in whom the bladder does not readily empty itself without considerable abdominal effort, this action is no longer required, the bladder discharging itself fully and strongly, and any existing tendency to constipation disappears, and this to such an extent that fluid operations are often produced from the rapid emptying of the small intestine.

5. A decided increase in the muscular strength and endurance is noticed at once. Thus, I found in my own case that I could "put up" a dumb-bell weighing forty-five pounds fifteen times with the right arm and thirteen times with the left arm, while after a single dose of the extract I could lift the weight forty-five times with the right arm and thirty-seven times with the left arm.

6. In some cases in elderly persons an increase in the power of vision is produced, and the presbyopic condition disappears for a time.

7. An increase in the appetite and digestive power. Thus, a person suffering from anorexia and nervous dyspepsia is relieved of those symptoms, temporarily at least, after a single dose hypodermically administered.

These effects are generally observed after one hypodermic injection, and they continue for varying periods, some of them lasting for several days. In order that they may be more enduring, two doses a day should be given every day or every alternate day, as may seem necessary, one in the morning and one in the afternoon, and kept up as long as the case under treatment seems to require. The most notable effects are seen in the general lessening of the phenomena accompanying advancing years. When some special disease is under treatment, the indications for a cessation of the injections will be sufficiently evident, either by an amelioration or cure.

To the substance obtained in this manner and held in solution, I have given, as stated, the name of "Cerebrine" as the

one, in view of its origin, most appropriate.

I have employed the solution of "Cerebrine" with curative effects in many diseases of the brain and nervous system. It is almost specific in those cases of nervous prostration—the so-called neurasthenia—due to reflex causes or excessive mental work, or persistent and powerful emotional disturbance. A hypodermic injection of five minims, twice daily, continued for two or three weeks, and without other medicine, being sufficient to produce cure. It has proved equally effectual in cases of cerebral congestion, in which the most prominent symptom was insomnia, sleep being produced usually in the course of two or three nights. I have also employed it successfully in migraine, hysteria, melancholy, hebephrenia—the mental derangement occurring in young people of either sex at the age of puberty—in old cases of paralysis, the result of cerebral hemorrhage. In neuralgia, sciatica, and in lumbago, it has acted like a charm, except in one case of facial neuralgia, in which it did not appear to be of the slightest service.

I have employed it in eleven cases of epilepsy. Three of these were of the *petit mal* variety; in two the effect has been so marked that I am not without the hope that cures will result, although I am not able, as yet, to speak positively on this point, the patients having been less than a month under treatment. In the other no influence appeared to be produced.

Eight cases were of the *grand mal* variety. In two of these the number of paroxysms has been reduced more than one-half, and greatly mitigated in severity. In six other cases which were of long duration I could perceive no curative effects.

In a case of general paresis no therapeutical influence was apparent beyond that of arresting the delusions of grandeur for a few days. In a case of hebephrenia, however, occurring in the person of a young lady eighteen years of age, the effect has been most happy, the symptoms entirely disappearing in a little more than a month's treatment.

In several cases of nervous prostration, the result of long-continued emotional disturbance, and in which there were great mental irritability, dyspepsia, physical weakness, loss of appetite and consti-

pation, relief was rapidly afforded. In three other cases in which the most notable symptom was functional cardiac weakness, the effect has been all that could have been desired. In these cases it was employed in conjunction with "Cardine," the extract of the heart of the ox, made in the manner already described.

It is not my intention at the present time to bring before you all the points of this interesting subject, or to allude further to experiments in the treatment of other diseases, which are not yet concluded. In the near future I shall enter more largely into the consideration of the matter in all its details. I will only add now that I have used with excellent results in cases in which it seemed to be indicated, the extract of the testicles of the bull and also that of the pancreas of the ox, and these investigations also will be given to the profession at an early day. The first named of these—"Testine"—I have found to be of the greatest efficacy in the treatment of sexual impotence when it has been the result of venereal excesses, and in cases of too frequent nocturnal seminal emissions.

It has recently been alleged by some medical authorities, that there is no difference in the physiological or therapeutical action of medicines, whether they be introduced directly into the blood by hypodermic injections or taken into the stomach, but it is scarcely worth while to seriously combat this assertion.

For while it may be true that some substances are not altered by the gastric juice before they are absorbed into the system, it certainly is not true of many others, and it surely is erroneous as regards those of animal origin. Indeed it is, I think, doubtful if anything capable of being acted upon by the gastric juice and of being absorbed into the blood gets into the system in exactly the same form in which it got into the stomach. And I am very sure that all organic matters, without exception, undergo radical changes under the action of the gastric juice, in some cases amounting to decomposition and re-composition.

It is well known that Woorara, the virulent arrow poison used by the Indians of South America, and which is invariably fatal to animal life when injected into the blood, is innocuous when taken into the

stomach, even in very large quantity. I have ascertained, by actual experiment, that the poison of the rattlesnake may be swallowed with impunity. During the course of my medical service in the army on the Western plains, I have collected a large quantity of rattlesnake poison. A small fraction of a grain of this injected hypodermically was sufficient to kill a dog in a few minutes, while previously the same animal had been made to swallow a half a drachm without the production of any apparent result. Experiments made with the saliva of hydrophobic animals prove that it is rendered harmless by the action of the gastric juice. The vaccine virus may certainly be swallowed with impunity, as has been shown by repeated experiments upon animals.

Relative to the animal extracts to which I am now referring, I have ascertained beyond question that if they are inclosed in capsules so as to reach the stomach without coming in contact with the mucous membrane of the mouth, they are absolutely without physiological or therapeutical effect so far as can be perceived, even when given in quantities of a teaspoonful or more, but if dropped upon the tongue in double the quantity used for hypodermic injection and allowed to remain in the mouth without being swallowed—thus avoiding the action of the gastric juice—they are absorbed and exert a slower but still decided effect, though nothing comparable to that produced when they are administered hypodermically.

Now, gentlemen, a few words in regard to the theory upon which these animal extracts exert these remarkable effects. I have thought a good deal upon the matter and I think I have arrived at something like the truth. But after all a theory, even when supported by indisputable facts, is not a matter of so much importance as the facts themselves. And it is better if you are sure of your facts to have an erroneous theory than none at all. The one I am going to propose is, I think, in accordance with physiological law, and I believe that it will strike your minds as being based on common sense, and as being sufficient to account for the observed phenomena. Briefly stated, it is as follows:

Organic beings possess the power of assimilating from the nutritious matters they absorb, the peculiar pabulum which

each organ of the body demands for its development and substance. The brain, for instance, selects that part which it requires; the heart, the material necessary for its growth and preservation, and so on with the liver, the lungs, the muscles, and the various other organs of the body. No mistake is ever committed; the brain never takes liver-nutrient, nor the liver, brain-nutrient; but each selects that which it requires. There are, however, diseased conditions of the various organs in which this power is lost or impaired, and as a consequence disturbance of function, or even death itself, is the result.

Now, if we can obtain the peculiar matter that an organ of the body requires and inject it directly into the blood, we do away with the performance of many vital processes which are accomplished only by the expenditure of a large amount of vital force.

Let us suppose a person suffering from an exhausted brain, the result of excessive brain-work. Three hearty meals are eaten every day; but no matter how judiciously the food may be arranged, the condition continues. Now if we inject into that person's blood a concentrated extract of the brain of a healthy animal we supply at once the pabulum which the organ requires. Then, if under this treatment the morbid symptoms disappear we are justified in concluding that we have successfully aided nature in doing that which unassisted she could not accomplish.

All this is applicable, not only to the brain, but certainly to the heart, the generative system, the spinal cord, and I believe other organs of the body. I have repeatedly seen a feeble heart rendered strong, the blood corpuscles increased in number, and the color of the blood deepened by the use of Cardine, and I have many times seen an exhausted sexual system restored to its normal power by the use of Testine, Cerebrine and Medulline.

Such is the system, and yet I am not quite sure that it is entirely new. I recollect reading nearly forty years ago an account of some observations made by, I think, a German physician, relative to the treatment of diseases of the several organs of the body by a system of diet, consisting of the corresponding organs of healthy animals. Thus, liver-disease was treated by beef's liver, heart-disease by beef's heart, brain-disease by beef's brain, and so

on. My memory seems to be clear on the main point, but I have searched in vain for the paper to which I refer. The fact, however, that the various foods in question were cooked and were taken into the stomach constitutes a great difference with the system which I am now discussing, both physiologically and therapeutically; and the results do not admit of comparison. The germ of the idea, however, is the same, and I cheerfully yield to my unknown proto-observer whatever distinction may be claimed on the score of priority.

And while I have been conducting my observations others have been at work in the same direction, but their investigations do not seem to have led to any very defi-

nite results, or to have been systematically carried out. Generally they have been performed with the fresh juice of the organs, and, although at first sight this method would appear to be preferable to any other, experience shows that it is, as I have said, not unattended with danger, and I have certainly ascertained that extracts made with glycerine and pressure, extemporaneously, are absolutely without effect, either physiologically or therapeutically.

And now, gentlemen, I commend this whole subject to your serious attention. I shall leave a quantity of Cerebrine with Dr. Leszinsky for distribution among you. I only ask that you will communicate to me the results of your observations.

COMMUNICATIONS.

POTT'S DISEASE: WITH REPORT OF CASES.*

M. M. EDMONSON, M. D., DALLAS, TEXAS.

This disease was recognized by Hypocrates and Galen and methods for its treatment were devised by Ambrose Pare. In 1783 it was first accurately described by Percival Pott. Since that time much has been written of its causation, symptomatology, pathology and treatment.

As the subject is a broad one I will only attempt to give an outline of the signs and symptoms of the incipient stage, and urge the importance of an early diagnosis and treatment.

The diagnosis of Pott's disease after the deformity occurs is only too apparent and from this point of view demands no further notice. It is before this late stage is reached that the skill of the physician and surgeon is called in to alleviate some obscure pain, and to trace to its origin the disease that causes a derangement of the nervous system that makes itself apparent at some remote point, as in the respiratory or digestive systems.

The result of careless examination and a treating of symptoms without due regard to the cause, is made manifest by a

record of cases compiled by Dr. Lewis A Sayre of New York. In his work on Orthopedic Surgery he states, that of 225 cases sent him by physicians, only three were sent before the deformity had occurred, and yet the majority of these cases had been treated for some supposed disease.

After making a careful examination of the different organs, and no organic lesion can be found that will account for the chronic symptoms that exist, the patient should be stripped and the spine thoroughly examined. A rigidity of the muscles of the back will be present in this early stage, which rigidity is "Nature's splint" for holding the spinal column in a fixed position and preventing jars and motions in the affected part. A difference in the temperature of the parts, determined by a delicate surface thermometer, may be of service in locating the disease.

The symptom of most importance, and the first complained of by the patient, will be that of pain due to pressure from inflammation on the spinal nerves as they pass out of the canal at the point of disease. The symptoms resulting from this will be most marked at the peripheral distribution of the

*Read before the North Texas Medical Association, December 14th, 1892.

nerves and consequently will vary according to the vertebræ involved. When the disease is high up in the cervical region the pain is most marked at the back of the neck and over the shoulder. If lower down in this region it may cause a chronic irritable cough, difficulty in swallowing and short, jerky respirations. In the upper dorsal region, pain in the chest and on both sides is a prominent symptom. If the sixth and seventh vertebræ are involved the patient may complain of indigestion, flatulence and the sensation of a constricting band around the body. The nerves of this region have their peripheral distribution directly over the pit of the stomach. If the disease is lower down in the spine, the bladder and the rectum may be involved, with radiating pains down the thighs.

In a large proportion of these cases the disease is situated in the intervertebral cartilages or in the anterior part of the body of the vertebræ, hence the pain is often symmetrical. If the first and second cervical vertebræ are involved, the attendant symptoms may be only on one side, giving the position of wry neck which is often mistaken for an idiopathic torticollis. If lower down in this region, or in the upper dorsal, the attitude of the patient is almost pathognomonic; the head is pushed forward, the chin is raised and the whole spinal column is rigid, due to muscular contraction. Lower down in the dorsal region the shoulders are raised and pushed backward. Still lower down the child leans backward protruding the abdomen. If the lumbar vertebræ are involved, the thigh is often flexed, due to psoas contraction which, on account of the deformity, is sometimes mistaken for morbus coxarius.

The absence of pain on direct pressure is no evidence that the vertebræ are not diseased. If the anterior part of the body is diseased pressure on the spinous processes, crowding them together, will diminish the pressure between the bodies and partly relieve the suffering of the patient. Pressure on the head will invariably increase the pain, while suspension by the head and axilla will relieve it. This, I consider the sign *par excellence* in diagnosing Pott's disease. If the disease is primarily at the junction of the ribs with the vertebræ pressure upon the ribs may

be the only means by which you can cause pain.

The treatment of these cases is a very important subject. For not only is the life of the patient involved, but long years of suffering follow if the ravages of the disease has spared life in the deformed, shrunken frame. For these reasons is it not strange that this subject has demanded so much attention. All that has been written on the treatment of Pott's disease has one paramount object in view and that is complete rest to the diseased parts. Every deviation from this state of rest brings with it pain and the admonition that the parts are not in a condition for restoration.

Hilton says that "growth is the auto-type of repair prefiguring the capabilities of existing structure to repair themselves. As is seen in the growth of the Animal and Vegetable Kingdoms rest is necessary for their full development. In the Animal Kingdom this is obtained by sleep; with plants it is by the heat of summer or the cold winter; then how much more necessary is rest for diseased parts before they can be fully restored to a healthy state, as growth and repair bear a close relation to physiological rest, both local and general."

With this as the essential condition what has been done to obtain it? The first that would suggest itself would be the recumbent posture as by this method all weight is taken off the diseased vertebræ. Samuel D. Gross advised this as an indispensable condition not to be departed from. Yet this method of treatment has serious objections. As a rule these patients have a tubercular diathesis and in many cases are emaciated, weak and anæmic. Take from them the requisites of good health, exercise, sunlight and fresh air and you have taken away the most valuable adjuncts that nature has given man to preserve and restore health.

This being recognized as a condition second only to rest, methods have been devised whereby both can be obtained. The first adaptation of these principles of treatment was made by Dr. C. H. Taylor, of New York. He constructed a brace which gave an excellent antero-posterior support and allowed the patient to take all the exercise necessary for good health. This brace with some modification was

almost exclusively used for years and splendid results were obtained. It is still used by some orthopedic surgeons in the larger cities where the surgeon can superintend the construction of the brace and any modifications that have to be made, for, unless the brace fits accurately and gives the proper support, it does more harm than good. Thus will be seen the impracticability of this or any other brace that has to be made simply from the measurements of the surgeon. Again its great expense would exclude its use in many cases.

The treatment by means of corsets and jackets has given as good if not more satisfactory results than were obtained by braces. The leather jacket made from a plaster cast of the body is expensive and will in a short time become loose and fail to give the necessary support. Cocking's poro-plastic jacket has the same objections, while the plaster jacket, for its general utility, cannot be excelled.

The plaster jacket owes its origin to Dr. Lewis A. Sayre, and his unqualified recommendation of its use has been fully justified by his successful treatment of cases and by its general use to-day. After suspending the patient by the head and axilla until the most comfortable position is reached, the plaster jacket can be made to fit the form perfectly and to give the necessary support and fixation to the diseased parts. The jacket alone may be sufficient when the disease is situated below the fifth or sixth dorsal vertebrae, but when just above this point the jury-mast must be used in conjunction with it.

In an exhaustive article written by Anders in 1889, on the effect of suspension, he concludes that the result is not a separation of the vertebrae and does not directly affect the projection. Yet if bony ankylosis has not taken place, suspension does in some cases decrease the deformity. This can be determined by actual measurements. While this is not due to an actual separation, yet all weight is taken off the anterior portion of the vertebrae and the spinal column is elongated.

The fact the spinal column can be elongated is made clear by G. Frank Lydston, in an excellent article on the treatment of Locomotor Ataxia. This elongation is due in great part to the elasticity of the ligamentum sub-flava. If

this can be done when all the structures are in a healthy state why can it not be done in Pott's disease before consolidation has taken place? Some objections have been made to the plaster jacket on account of its weight, and because, after being worn for some time, it becomes soiled and will break down. The slight weight of the jacket, if it is made of the proper material, is not an objection. The other instead of being an objection should be a recommendation for its use as in three or four months it can be re-applied, holding what we might have gained in a reduction of the deformity, and the new jacket made to fit more accurately every change in the form of the child due to growth.

In conclusion I will report two cases that illustrate these old but ever true principles. I give these cases as one was treated before the deformity had occurred and the other after.

CASE I. Frank D., aged two years, family history good, no tubercular diathesis being present. The child was in perfect health until April 1891, when he fell about two feet striking on his back. He complained of great pain and was stiff and sore for a few days. Nothing further was noticed until the following June when he began carrying his head in a peculiar position; the head was pushed forward, the chin raised, the shoulders were drawn upward and backward and the body held rigid. Walking or stooping, he was careful and guarded in all his movements, never allowing the spine to bend. At this time he was restless in his sleep. So long as he was in one position he was quiet, but whenever he would move or attempt to turn over he would cry out. On three or four occasions, when the mother was giving him a bath, she tried to straighten his head. Whenever she attempted this the child became unconscious, his respirations were short and rapid. This is a brief history of the case up to the time I saw him in November, 1891, when I was called in consultation by Dr. H. A. Morley of Dallas. Upon examination we found the condition stated above and these additional signs: That pressure on the head and buttocks crowding the vertebrae together increased the pain, while suspension relieved it and his respiration became full and easy. This convinced me that the child was suffering

from spondilitis. The sixth and seventh cervical vertebræ were involved. I could not apply the plaster jacket at once as his abdomen protruded so much that it was impossible to get a good support from the jacket. On December the 12th, I put him in an improvised cuirass making extension on the head. This answered my purpose for the time being, and the child rapidly improved in general health. On January 17th, about five weeks after treatment was begun, I applied the plaster jacket and jury-mast. This treatment was continued, putting on a new jacket every four months until an absolute cure was effected.

CASE II. Maude M., aged fourteen, came to me in April, 1892, and gave the following history: In April, 1888, she

fell; was sore and stiff for a few days following, but no definite symptoms resulted at that time. A few months after this a slight prominence was noticed in the middle dorsal region. The family physicians were called in and, recognizing the trouble, advised her to lie in bed for several months. She did this for four months and improved some in general health, but the curvature had increased. Nothing further was done until I saw her last April. As the disease was still progressing and the curvature was very marked I applied a plaster jacket. She improved in general health, and I feel satisfied that the disease is stopped. This is all that I hoped for in this case, as the disease was of long-standing and it was impossible to obtain a recession of the deformity.

RHEUMATISM.*

F. H. RUSSELL, M. D., BLUFFDALE, ILL.

One of the most frequent as well as most troublesome diseases that the practitioner is called upon to treat in a general practice is rheumatism, muscular and articular. Articular rheumatism may be divided according to its stage of persistence into chronic and acute. Some writers make a third division into the 'sub-acute,' but I think nearly if not all of the characteristics of articular rheumatism may be described under the heads of acute and chronic stages. When the fever is high, accompanied with local pain and swelling, it is called acute rheumatism or rheumatic fever. Cases presenting local pain, stiffness, impairment of locomotion and persisting a long time, but without fever, are called chronic rheumatism.

Bartholow says there are three types of bodily conformation in rheumatism. *First*, the pale and anæmic. *Second*, the robust and vigorous with an inherited tendency. *Third*, the obese, often given to the consumption of malt liquor and having an acid form of indigestion. The three types are named in the order of their frequency.

Rheumatism is, generally speaking, a

disease of youth and early manhood. It rarely commences before the seventh or after the fiftieth year. This rule is far from invariable, for there are cases on record commencing in the first year of infantile life. Rheumatism is more frequent in males than females. Not because men are more susceptible to it than women, but because they are more exposed to the causes producing it. It is rare that we have an opportunity of studying the post-mortem appearances of rheumatism, but when they have been studied the morbid appearances are slight compared with the apparent extent of the mischief. Blood when drawn coagulates rapidly and contains an excess of fibrin. The excess of fibrin sometimes amounts to ten per cent. The articular cartilages are cedematous. The synovial fluid is increased in amount and changed in character. Instead of being an homogenous transparent viscid fluid, it is thin, watery, reddish from extravasated blood, and turbid from the presence of fibrin and pus corpuscles. There is never any considerable amount of blood in the fluid except in patients of a hemorrhagic diathesis. The color of the fluid varies according to the amount of extravasation. Its reaction is alkaline. Albumin and fibrin are found

*Read before the Medical and Surgical Society of Western Illinois, January 13, 1893.

in abundance. Urate of soda is never found. Oedema and hyperæmia of the endocardium and pericardium are local manifestations of a constitutional disease.

The causes of rheumatism are predisposing and exciting. The predisposing causes are, *first*, the inherited tendency. *Second*, Dr. Davis claims long continued physical and mental exertion. *Third*, anything that retards excretion and secretion. *Fourth*, season of the year, as most of the cases occur between December and March. *Fifth*, insufficient or poor quality of food and clothing. *Sixth*, pregnancy and prolonged lactation. *Seventh*, scrofula, phthisis and cancerous affections frequently precede rheumatism. The principal exciting cause is exposure to cold and dampness thus suddenly arresting excretions.

Dr. Loomis claims that 'excess of sulphur sometimes causes rheumatism,' but the most universally accepted theory is that rheumatism is caused by excess of lactic acid in the blood. This has been clinically proven by the fact that patients taking lactic acid for the cure of gout are affected subsequently with rheumatism. It has been proven experimentally by Richardson by injecting lactic acid in the veins of a cat, rheumatism being developed within twenty-four hours. One attack predisposes to another. Articular rheumatism generally comes on suddenly in the night, and with little premonitory symptoms. It is generally ushered in with a chill or chilly sensation; a feeling of general *malaise* with pain, heat and swelling of one or more joints. The initial chill is followed by fever running from 102° to 104°. The patient has thirst, anorexia, a coated tongue, constipation, headache, wakefulness and general uneasiness. At first the large joints are attacked, but subsequently the small ones may be involved. The termination of the febrile symptoms is gradual and not by crisis. The pulse is slower than the temperature would indicate, rarely running above 95. There is generally profuse acid perspiration. Pain is aggravated by motion, and is most apparent in joints not covered by adipose tissue, as the elbows and knees. The urine is scanty, strongly acid, deep-red in color and deposits a great quantity of urates and uric acid. The chlorides are diminished and the sulphates increased. Albumen is present in small quantities.

The saliva is said to become acid in reaction. Delirium is sometimes present in severe cases. It is always accompanied with high fever, and sometimes the temperature reaches 109° to 111°. Generally the local symptoms follow the law of parallelism, that is, parallel joints are affected simultaneously—as both elbows, both knees, etc.

In the diagnosis of rheumatism we have to differentiate from pyæmia; the history of the case, the recurrence of chills, and multiple abscesses are diagnostic points and ought to prevent this error. We have to differentiate from gout, but the fact that the small joints are attacked first in gout and last in rheumatism, and that gout is a rare disease in this country and has a history of high living, ought to prevent this mistake. Rheumatism is a disease of early life; gout rarely occurs before the age of thirty-five. Also in gout cutaneous affections are frequent; they are rare in rheumatism. We have to differentiate from arthritis deformans. Here, as in gout, the small joints are attacked first. Arthritis, unlike rheumatism, attacks women more frequently than men. In arthritis there is no fever even in the acute stage. This is a diagnostic point. In rheumatism the local manifestations move from joint to joint; in arthritis they are stationary.

Before closing my remarks on the diagnosis of rheumatism I will call your attention to a disease that we have to differentiate from and that the text-books do not put much stress on, namely, morbus coxarius. I saw one case of morbus coxarius treated for over a year for rheumatism, and have always thought that if the diagnosis had been made sooner the result might have been different, for the patient was a girl and was left a cripple for life. The diagnostic points are: Rheumatism is a disease of early manhood, while morbus coxarius rarely occurs after twelve years of age. In rheumatism the local manifestations are migratory; while in morbus coxarius they are stationary in the hip-joint. Motion is embarrassed in morbus coxarius; not so much so in rheumatism. Rigidity of the muscles about the hip and inability to rest the weight of the body on the affected limb are diagnostic points. Morbus coxarius is always unilateral; rheumatism rarely so. In coxalgia there is no initial chill and but

slight, if any, fever. The psoas iliacus and adductor muscles are in an unusual state of tension, hence the thighs are flexed and foot everted. These are diagnostic points that ought to prevent mistake.

The prognosis of rheumatism is generally good. The mortality is estimated at three per cent. Rheumatism runs an indefinite course. The milder the attack the shorter the duration. The great danger in rheumatism is heart complications. The younger the patient the more liable he is to these complications. Various estimates have been made as to the frequency of heart complications. Some authorities put it at five per cent., others as high as seventy-five per cent. A strange sequelæ of rheumatism sometimes is chorea.

In the treatment of rheumatism there are a great many remedies to choose from. Each authority has a different notion as to how it should be treated. I think different cases require different treatment; but in all cases there are certain indications to meet: *First*, to neutralize the acid that is supposed to cause the trouble. This is done in two different ways, either by the alkaline or the acid treatment. By the alkaline treatment we should give the alkalies, preferably the soda salts until the urine is distinctly alkaline. In the acid treatment we use either the salicylic acid or its salts. The way the acids are supposed to work is by having a stronger affinity for the blood than lactic acid. The blood gives up its lactic acid and appropriates the salicylic acid. The *second* indication is to relieve pain. This is done by opiates, or is sometimes accomplished with antifebrin, but this remedy is not to be pushed too far for it is very depressing. Phenacetine is an excellent remedy in some cases for the relief of the characteristic pains of rheumatism. The *third* indication is to prevent heart complications. To meet this indication the universal verdict is in favor of the ammonia salts, especially the bromide and carbonate. The *fourth* indication is to repair damages and prevent recurrence. To do this keep the secretions and excretions in good working order. To accomplish this, attention must be paid to the skin, kidneys and bowels. To meet this indication the so-called alteratives come into play. There is one remedy in the alterative group that I wish to call especial attention to in the treatment of this dis-

ease. It is poke root or phytolacca. I have seen its beneficial effects so often demonstrated as to leave no doubt in my mind that it is a remedy of extraordinary power in rheumatism, especially in the chronic form.

In the weak and anæmic, tincture of the chloride of iron is excellent. Arsenic and potassium iodide are frequently beneficial in chronic rheumatism. Salol is a remedy of remarkable virtue in this disease. In the experimental work that is going on in the coal tar products, there is no doubt but some time we will have rheumatism as completely under our control as an ordinary intermittent fever.

Good Cause for Suicide.

William Harman, a resident of Titusville, Pa., committed suicide a few days ago from a melancholy conviction that he was his own grandfather. Here is a singular letter that he left: "I married a widow who had a grown-up daughter. My father visited our house very often, fell in love with my step daughter and married her. So my father became my son-in-law and my stepdaughter my mother, because she was my father's wife. Some time afterwards my wife had a son; he was my father's brother-in-law and my uncle, for he was the brother of my stepmother. My father's wife—i. e., my stepdaughter—had also a son; he was, of course, my brother, and in the meantime my grandchild, for he was the son of my daughter. My wife was my grandmother, because she was my mother's mother. I was my wife's husband and grandchild at the same time. And as the husband of a person's grandmother is his grandfather, I was my own grandfather."

—*Ex.*

They Would Declare the Corpse Dead.

The court of Schleswig-Holstein recently issued the following curious notice: "At the request of Herr Peter Lobmann, of Altona, the seaman Dietrich Lobmann, who was born in Kirchmoor in November, 1848, and was drowned on the journey from Stockton to Hamburg while sailing in the ship Bertha Jenny, is hereby called upon to appear before this court and report himself, on or before Friday, January 20, 1893, at 11 o'clock P. M., under pain of being declared dead."—*Ex.*

SOCIETY REPORTS.

THE MEDICO-CHIRURGICAL SOCIETY, OF LOUISVILLE.

Stated Meeting of January 6th, 1893.

THE PRESIDENT, Dr. F. C. Simpson,
in the Chair.

EPITHELIOMA: TRAUMATIC EPILEPSY.

DR. W. O. ROBERTS: About the first of October a man fifty-five years of age, German, had his forearm amputated at the University Clinic, for removal of an epithelioma of the hand. Last Tuesday he appeared at the clinic again with a tumor in the axilla on the same side. This morning I removed the growth, cleaning out the axilla thoroughly, leaving nothing except the blood vessels and nerves. I not only removed the tumor, fascia and fat from the axilla, but also the skin which was adherent to the growth. The tumor extended from the floor of the axilla to the apex.

No. 2. There was also at the clinic a man twenty-eight years of age, who, thirteen years ago, was struck on the side of his head with a hoe. A few months after the healing of the wound he began to have dizzy spells and shortly afterward regular epileptic convulsions. The cicatrix left from the wound was exceedingly sensitive and pressure upon the cicatrix he claimed gave him a peculiar sensation in the head. Thinking that possibly this was a case of epilepsy due to imprisonment of a nerve in the cicatrix I removed it and examined carefully for evidence of injury to the bone, but could not discover any. There have been such cases reported. I saw not a great while ago in one of the journals a report of a case where epilepsy was relieved by removal of the cicatricial tissue from a wound of the scalp. I do not take much stock in the theory, still as they have been reported I think that we ought to give these cases the benefit of the doubt and do the operation.

DISCUSSION.

DR. W. L. RODMAN: I saw this patient when he first came to the Clinic in the month of October, for amputation of the hand, and was very much surprised to see him to-day, in the condition that he was,

with all of this enlargement beneath and in the axillary space. It seemed to be a case of epithelioma and, from the general condition of the patient at the time, it looked as if it was a very favorable one for operation, and as if he possibly would be relieved for several years as a result of the amputation. The question will naturally come up as to whether these glands were enlarged at the time of the amputation, as it has been such a short time since the operation, but I am pretty well satisfied in my own mind that the glands were not enlarged at the time amputation was done. I made a careful examination at the time and no enlargements could be detected. This was also done by Drs. Yandell and Roberts who performed the operation. The man was very fleshy and possibly there may have been enlarged glands which could not be detected. It is a very interesting and unusual case and teaches us that epithelioma, which we are usually inclined to look upon as the least malignant of all forms of carcinoma—and undoubtedly it is the least malignant save atrophic scirrhus—sometimes runs as rapid and malignant a course as encephaloid. I have no doubt this man will be dead in less than six months. He suffered a twelve-month before operation. Eighteen months is a rapid course for epithelioma in any situation.

As to the second case, I fully agree with Dr. Roberts in the statements he makes. I have seen a great many operations for epilepsy and have never yet seen a single case where the patient was permanently benefitted thereby. There is sometimes relief for a short period as a result of trephining, but in all cases that have come under my observation the paroxysms have returned in less than six months after the operation.

DR. TURNER ANDERSON: From the appearance of the tumor exhibited by Dr. Roberts it seems to me the operation must have been a very thorough one.

DR. W. O. ROBERTS: I simply want to say that I never examined the patient

from whom this tumor was removed, prior to the operation, except last Tuesday, but I know that he was thoroughly examined and as Dr. Rodman says no enlarged glands were detected. He was an exceedingly fat man and, of course, if these glands were located high up in the axilla they would not have been detected. Very frequently in carcinoma of the breast we are unable to detect enlargement of the axillary glands, unless they are of considerable size, until after the axilla has been opened and thoroughly explored, then we wonder why we were not able to detect them before operation. We do have cases of epithelioma followed by encephaloid and the rule is after removal of a malignant growth—it matters not what form of cancer it may be primarily, whether it be epithelioma, scirrhous, or otherwise—the recurrent growths are apt to be encephaloid in character and to be very rapid in their development.

I saw a case not long ago, of a man forty years of age, who had what was supposed to be sciatica, and for this he was treated several weeks. Then there was a change made in his medical attendant and the second doctor discovered a lot of growths about the size of an almond on one of the patient's legs; two or three located between the knee and ankle, one just above the knee, one about the centre of the thigh on the outside of the leg and one in the gluteal region—all on the same side. These growths were exceedingly sensitive to the touch and the man suffered intense pain. At the time I first saw him, about two weeks ago, the growths were very sensitive, and, in addition to those I have mentioned, there were two or three others in the gluteal region. I told the doctor that I was under the impression that these growths were multiple sarcoma, possibly involving the branches of the nerves which caused them to be so exceedingly painful. I saw the man again two or three days ago and several more of these growths had appeared in the gluteal region and one on the tuberosity of the ischium on that side. We decided to remove one of these growths for the purpose of microscopical examination and I selected the one on the outer side of the thigh; it seemed quite movable and quite hard. I cut down upon it and found it in the body of the vastus externus muscle and soft; it came out in pieces; just as

soon as I cut through the muscle it welled out like a broken down neoplasm. From the appearance of the growth I suspected sarcoma; analysis has not yet been made; it was only removed yesterday.

DR. W. L. RODMAN: Do you think these tumors have grown any in the last two weeks? And how long has the patient had them?

DR. W. O. ROBERTS: They do not seem to have increased much in size, but have considerably increased in number. I believe they have all appeared within the last eight weeks. There are certain muscles of the leg which are especially liable to sarcomatous deposits. These, if I remember correctly are: the pectineus, sartorius and gluteus muscles. The growth I removed, however, was in the vastus externus. As I say microscopical examination has not yet been made of the growth removed.

DR. W. L. RODMAN: Rare as sarcomas of muscles are, I think that you have such a case. Butlin reports only twenty-one such cases in his work upon malignant disease.

VARICOCELE.

DR. T. L. McDERMOTT: In assuming the discussion of varicocele, a seemingly surgical subject, some explanation might be proper upon its introduction by a general practitioner. In these, as well as numerous other distinctly operative cases, however, he is the person first consulted and upon his judgment and decision largely depends the final measure adopted for relief. So that the question becomes of paramount importance to the interests of the patient and diverse to those of him intrusted with his management.

The hypochondriasis that accentuates its intensity and in fact first leads the victim to solicit assistance, becomes and remains the leading symptom to invite diagnosis and prompt redress. Such being the case, is it not natural to premise that it opens to the general practitioner a tempting avenue to the administration of treatment for restoring a depleted function, which may require a local surveillance instead of a general cure?

The surgical authorities themselves, are at very wide variance upon the advisability of operative procedure, many contending the interference to be useless and even blameful, others, more sanguine, only op-

erating to relieve the incumbent tension and consequent pain. It becomes then a mooted question whether it is entirely proper or magnanimous for the physician to yield up a patient at the expense frequently of personal vanity and always of pecuniary loss.

The literature of the subject, so far as text books go, is very obscure, and its disquisition entirely inadequate to the magnitude of the issues concerned. Its utility, however, is a matter of unbounded importance, possibly, to the individual concerned, second only to existence itself.

The various morbid conditions of mental deterioration that have found their origin in this, as well as other morbidic sequelæ of a sexual impairment, which saps not only the well being but the highest intelligence of pleasurable emotion known to human indulgence, certainly appeals to every scientific endeavor that might encompass its fullest fruition. This phase of the subject is the suggestion of its discussion prompted, in this instance, by a letter from a patient who had recently submitted to the operation with the most gratifying results. In this instance there came to consult me, a bridegroom of a week, on his wedding tour—asking advice and medicines for the restoration of an incompetency which he attributed to early indiscretions. He was utterly disconsolate over his fruitless efforts to accomplish the marital act, and a prey to remorse intense enough to lead him possibly to some desperate rashness. Upon examination I found a varicocele and divining the trouble, advised an operation. It was performed at once, and as I have said before, with the most rapturous success. I shall read his letter written a few months later:

DR. W. L. RODMAN, Louisville, Ky.

Dear Doctor:—Allow me to thank you for your kindness to me, and for the successful manner in which you treated my case. I am entirely well and feel better than for twenty years past. I have gained seven pounds since I came home and my wife seems perfectly happy.

Imagine drowned honor dragged up by its matted locks from any slough of despond yon could conjure, and any other simile of tragic lore, but what is the comparison with this belted knight of Venus, springing from the depth of despair, thrice armed and eager for the fray. How different the scene since that bridal morn. The church bell changed its funereal dirge to pæon strains and frisking birds piped

roundelays from bush and dell, to greet the gallant groom as he drew near home.

I have another letter from another subject, which I shall also read, bearing the same burden in its tenor and filled with praise:

DR. W. L. RODMAN, Louisville, Ky.

Dear Doctor:—Referring to the operation performed on me for varicocele, will state that I have been much benefitted, as I feel that it is impossible to copulate enough at times. Prior to operation I was passionate at times only, but now I believe I can raise a stake at any time. I feel very much better and stronger since the operation, and am sorry I did not have the work done sooner.

It is useless for me to discuss the causes of varicocele, as they are necessarily obscure. I could only suggest that varicosity might be an idiosyncrasy, as we meet it in individuals of all ages, of good or bad habits, and, in both the symmetrical and ill-formed. This obtains in the limbs as well as scrotum. One peculiarity, however, is evidently due to anatomical configuration, namely, that the seat of varicocele is usually found on the left side. This is due to the spermatic vein emptying into the renal vein instead of the vena cava on that side.

Of the operations, the open dissection of the veins is certainly preferable, in my experience, to Lee's, in which the vein is ligated. Under antisepsis it is almost absolutely safe, and gives little detention even from business affairs.

In a resume of the cases that have come under my observation I incline, strongly to the opinion that, in suitable cases when the testicle is losing its resiliency and becomes softened, the operation should be performed, not only to relieve the distress incident to its dragging weight upon the cord, but also to restore to a lost impulse the franchise of love.

DISCUSSION.

DR. W. L. RODMAN: There has ever been a wide diversity of opinion among medical men as to the causation, pathology and treatment of varicocele. The causation of the disease is usually ascribed, as Dr. McDermott says, to the fact that the spermatic veins on the left side embogue into the left renal vein at a right angle, instead of into the vena cava at an acute angle, as they do upon the right side. This demonstration was first made years ago by my distinguished friend Professor Brinton, of Jefferson College. This anatomical point has not been satisfactory

to all, and there have been many other reasons advanced for the fact that varicocele is so much more common upon the left than the right side. Some claim that it is due to an accumulation of fecal matter in the sigmoid flexure, whereby pressure is made upon the spermatic veins and the return of venous blood prevented. McGraw, a prominent surgeon of Detroit, Mich., read a very interesting paper upon this subject at the last meeting of the American Medical Association, in which he assigned as a cause of varicocele the action of the cremaster muscle. This I do not believe will hold good, as it does not explain the greater frequency of the disease upon the left side. Others have ascribed the occurrence of varicocele to early excesses, etc., etc.

However much we may differ as to the causes of varicocele, there should not be such a contrariety of opinion as to its proper treatment. Many authors do not take a pronounced stand in favor of treating varicocele surgically. To me nothing more imperatively calls for operation than an aggravated case of varicocele. Moulton, one of the most recent authors has very pessimistic views upon the subject, and only advises operation in the most extreme cases where there is disintegration of the testicle.

He also greatly magnifies the danger from operation. His personal experience must be limited. I believe there are very few varicocele of any size, which last for five or six years, where there is not a considerably injury done the testicle, and when this can be prevented by so simple and safe an operation, it seems to me that it should be done more frequently than it is. I can very well understand how the older authors argued against operations for varicocele because none of the operations practiced prior to the last five or ten years were an approach to the ideal. Subcutaneous surgery is surgery in the dark. I did very few operations for varicocele until within the last five years, since that time I have done quite a number of them; in the last year I have performed I think on an average about one per month. I feel that it is at times one of the most humane and considerate operations that can be done. Wherever I find there is a well marked swelling or tumor caused by enlarged veins, where I find pain or dragging of the testicle, where there are lumbar pains,

etc., whether accompanied by any grave cerebral symptoms or not, I advise early operation. If a man has a simple varicocele and has never worn a suspensory bandage, especially if he be a young subject, I advise him to try a bandage for six months or a year and then, if there is no improvement, I urge operation. Only a few days ago I declined to operate upon a young married man telling him to procure a suspensory bandage and wear it for a year, then if he received no benefit to come to me again and I would operate.

I want to give you the history of the first case referred to by Dr. McDermott: He was a man about thirty-seven years of age, and as the Doctor has stated, he came to his office about a week after he was married. He was referred to me, and when he came to my office I noticed his actions were very peculiar; he came into the room and was very particular to close the door carefully and afterward to look around to be sure that there was no one present; he then slipped up to me and in an undertone remarked: "Doctor, I am a victim." I asked "a victim of what?" To which he replied, "Early excesses." He then said that he had been to see Doctor McDermott who had made an examination and told him that he had a varicocele and advised his consulting me. I made a careful examination and saw that this was a very extreme case. I have seen very few cases where there were such marked mental symptoms, and where there was such prompt and thorough relief by simple operation. He also told me that he had attempted intercourse twice since marriage and had utterly failed; that he was unable to get an erection, but had had one imperfect emission. I sent him to the infirmary and operated the next morning. I told him when he left not to attempt intercourse until the third week after the operation. I did not hear of him until about a month afterward when he came into my office one day, and I never saw greater change in a man's appearance in my life; the first thing he said was, "Doctor, I am all right." I asked him more particularly what he meant by being all right, and he said that he had no trouble and could have intercourse as well as he ever could in his life. I inquired as to the frequency with which he could perform the marital act, and he replied two or three times per week. He had then

been married about two months. We afterward received a letter from him which was read by Dr. McDermott, confirming the assurances he gave in person that he was entirely relieved. The results in this case are certainly very gratifying, and I feel safe in saying that no treatment by electricity or any other means could have brought about the same relief as by operative procedure. In all the cases I have operated upon for Dr. McDermott in the last six or seven years, four of which have occurred in the past year, I can conscientiously say, and he will bear me out in the statement, there has not been a single one of them that has not been entirely relieved. They have not only presented the appearance to me of being relieved, but each one has assured me that he felt perfectly well in every respect. I do not know that I have ever done a varicocele operation where the results were not all that could be expected. In certainly twenty or thirty operations of this character that I have performed in the last two years, I only call to mind one case where the patient claimed that he was not relieved, and yet all the facts in the case tend to prove that he was entirely cured. Three or four years ago a young man was brought to me by a physician of Lawrenceburg, with a varicocele on the left side. I operated upon him at the St. Joseph's Infirmary, and he remained there about two weeks. I thought he was entirely relieved of the trouble; in fact he said so himself. He went home and I heard nothing more from him until I sent him my bill, which he declined to pay, stating that he had not been cured and for that reason refused to pay the bill. However, I learned through his physician, who examined him, that he was entirely cured, and I am certain that he was. He married, which is a confirmation of it, in less than six months after the operation, and has two children now. I believe that the modern operation of excision, removal of about an inch of the veins and suturing the stumps together accurately so as to lift the testicle up, is the ideal operation. And I cannot agree that there is any danger in it, as some authorities would have it appear, as I have never in my own experience seen a single untoward symptom. I have only seen one case of orchitis following varicocele operation and that was in one of my earlier operations. As I have said no unfavorable symptom has occurred

since I have practiced the open method as described above. I rarely see suppuration. I prefer iron-dyed silk for suturing the veins.

DR. T. S. BULLOCK: I have enjoyed Dr. McDermott's paper very much, and can testify to the extreme nature and frequency of this trouble. I would like to say a word or two in regard to the causation: I have always thought varicocele in part was due to the frequent excitement of sexual sentiment without gratification. I believe that there are very few young men who remain unmarried for any great length of time, and have not unusual facilities for sexual pleasures, that escape without varicocele.

DR. W. O. ROBERTS: I have very little to add to what has already been said with reference to this subject. Varicocele is an exceedingly common affection, and it occurs in the young as well as the old. There is no doubt that in young subjects the disease sometimes passes away under appropriate treatment; after adult age, however, I do not believe that it ever goes away. As to the cause of the disease, it has been attributed, as Dr. Rodman says, to quite a number of things. It rarely ever occurs on the right side. I notice that in Agnew's examination of thirty thousand troops he never discovered a well marked case on the right side. Cooper, Marshall and others also report not having found a single well marked case on the right side. It does, however, sometimes occur, and occasionally in the same subject on both sides. I have, during the past three months, had a case of this kind in which I operated first on the left side and two months after operated on the right side. As to the indications for operation—I think that we are justified in advising it when we find cases of varicocele of long-standing, where there is evidence of wasting of the testicle, where the patient suffers from dragging pains in the loins, and where we want to operate for the purpose of relieving the mental condition which it gives rise to in a great many instances. There are many cases, however, of large varicocele in men who understand it, you might say who are not frightened by it, where it does not seem to affect their virile power in the least. Still in these cases, where there is evidence of wasting of the testicle, I think operation should be advised.

As to the different methods of perform-

ing the operation, between the subcutaneous and the open method, I strongly favor the open method. I have done every operation that has ever been advised for varicocele, excepting one, viz.: the removal of a large section of the scrotum for the purpose of making a natural suspensory. In former years I did, as Dr. Rodman says he has done, the subcutaneous operation. I have long since, however, given it up. In these cases I find that the patient very frequently suffers from a neuralgic condition of the cord, which continues for months and months. I have seen follow these operations abscesses which, of course, must have been due to want of proper aseptic precautions. The open method I think is decidedly the safer procedure. It is an exceedingly simple operation, and is one which can be done under anæsthesia; the others cannot. When subcutaneous ligatures are applied, you want to have the veins distended so that you can discover them. In doing this operation I make a free incision over the cord and expose the veins. I always remove a large section of the veins, an inch or more, and then bring the stumps together. The method mentioned by Dr. Rodman is an excellent one. After ligation of the veins above and below the central portion is removed, then the ends are brought together and stitched, which brings the testicle well up. I have performed the operation in this way a number of times with the most happy results. Recently I have been following the method advised in *The American Text Book of Surgery*, which is as follows: The veins are exposed but not separated from the fascia surrounding them and holding them together; the vas with its venous plexus is recognized and avoided. An aneurysm needle threaded with catgut is then passed under the vein at the upper end of the incision and again at the lower end; the ligatures are tied and in each instance left with one long end, the intermediate portion of the veins is then cut out with scissors and the stumps are brought into apposition and held by tying the ligature together. This method like that of stitching the stumps together, raises the testis to a higher level and results in shortening the scrotum on that side.

Since I adopted the open method of treatment for varicocele, I have met with

only one case in which I had any trouble. That case was in a dissipated man, and the varicose veins and scrotum were very large and the testicle very small. Following the operation there was suppuration and, while it was not excessive, it continued for some little time; but there was no sloughing noticed and the man finally got well. I saw nothing more of him for a year; he came into my office the other day and asked me to examine him; I did so and found that the testicle on that side was gone entirely.

DR. TURNER ANDERSON: I would like to inquire how the circulation is kept up after removal of a portion of these veins; I should think there would be great danger of atrophy of the testicle.

DR. W. L. RODMAN: I fully agree with what Dr. Roberts has said in regard to double varicocele, and was a little surprised to hear him quote Agnew as having stated that there was not a single case occurring on the right side. I have seen two cases of double varicocele in the last six months. The man who wrote the first letter read by Dr. McDermott had a very small varicocele on the right side, but it was not operated upon owing to its size, and it was evidently the one on the left side that was giving him the most trouble. I operated upon a man at the city hospital about three months ago who also had double varicocele, and I do not think it is as uncommon as has been reported. Another point that might be mentioned in this connection is that men with varicocele are not accepted either in the Army or Navy. One reason why the modern operation for varicocele is so much better than the old subcutaneous method is, that in the subcutaneous operation you can never tell just exactly what structures you are embracing in the ligature, but with the open method you can see just what you are doing.

Dr. Anderson's question is very easily answered. It is only the superficial veins that are enlarged in varicocele, and there are a number of smaller veins that are situated deeper, that are sufficient to carry on the circulation. That these deeper veins are sufficient to carry on the circulation is shown by the fact that they may so enlarge as to necessitate a second operation. In the ordinary operation only the superficial veins or "pampiniform plexus" are removed. Relapses are rare.

DR. T. L. McDERMOTT: In all these cases that I have had with Dr. Rodman, I have noticed that the testicle was always smaller on the side on which the varicocele occurred; the testicle seeming to be very much shrunken, in some cases exceedingly so. I think the operation clearly justifiable when such happy results can be ac-

complished as those stated in the paper read this evening. There is very little information in the text books concerning operations for this trouble, and I believe if more were known of the benefits to be derived from so simple an operation, if people would look into it more, the operation would meet with more general favor.

CORRESPONDENCE.

NEW YORK LETTER.*

About four months ago the New York Academy of Medicine appointed a committee consisting of Drs. Janeway, Jacobi, Prudden, A. L. Loomis, Hamilton, Stephen Smith and R. H. Derby for the purpose of investigating the condition of New York quarantine as well as to ascertain the desirability of establishing a National quarantine. This committee represents the brainiest medical men in the city, and their decision is accepted as conclusive by the mass of New York practitioners.

At a special meeting held at the Academy last week the committee reported the result of its investigations. The members found the quarantine system of this port in a condition wholly incompetent to efficiently protect the citizens against infection from cholera, and that what facilities did exist in the way of extirpating the dread disease, were not satisfactorily utilized by the officers in charge. The members of the committee fear that unless a radical change is immediately made in the quarantine affairs of this port cholera will obtain a foot-hold in our city in the spring. They urged the necessity of the establishment of a National quarantine as the best way to solve the ominous question; claiming that in a National quarantine there would be uniformity and system; international aid would be obtained through our consuls; that well-trained men and better material would be more easily obtained, and that local politicians not unwilling to sacrifice public health to personal emolument would be replaced by men of ability and honor.

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The committee regarded the scenes of last autumn a disgrace to the city and could see no way in which a similar scene would not be repeated in the spring other than by the establishment of a National quarantine. The report is a lengthy and scholarly article and if Congress attend to the matter in the way recommended by these famous physicians it is highly probable that Asiatic cholera will not obtain a foot-hold in New York.

In a recent lecture, Dr. H. M. Biggs, Professor of Materia Medica at the Bellevue Medical College, reported the results of observations taken during a four week's stay at Carlsbad last summer. He said that although Carlsbad was undoubtedly the most popular health resort in the world, it did not owe its fame to any peculiar constituents of the much lauded waters.

He found that about forty thousand patients go there annually and take a course of treatment lasting from four to six weeks. The most prominent diseases found among the patients are gout, rheumatism, gastro-intestinal, catarrh from alcoholism or over-feeding, and disease of the liver and kidneys. An examination of the Carlsbad water showed that it owed its efficacy to sulphate of soda, of which it contains a large amount, sulphate of magnesia, sodium chloride, alkaline carbonates and carbonic acid gas in solution. The main part of the treatment consists in the regulation of the diet and habits, and upon this feature of the course the success of Carlsbad depends. The waters are taken early in the morning, from six to eight o'clock. As many

as four thousand people may be seen walking in the vicinity of the springs. The water is taken, a small glass at a time, every fifteen minutes, the patient meanwhile taking moderate exercise, and this drinking is kept up for two hours. After the last drink the patient walks steadily for an hour or more, the time depending on his strength. After a few days at the resort this exercise can be easily taken without the desire for food or rest. About nine the patient returns to his hotel for breakfast having had nothing to eat before this time. Breakfast consists of a cup of coffee, a roll and a couple of soft boiled eggs. For dinner is served one vegetable, soup, a small piece of roast meat and a half pint bottle of Bohemian red wine. During the afternoon the patient drinks more water from the springs and takes more exercise. Supper at six consists of a cup of tea, a small piece of roast beef, one vegetable and perhaps a little oat meal. All pastry, sugar, salads and fruits of all kind are entirely shut off from the patient. All patients must retire at nine o'clock.

The results of this plan of treatment is often striking. Better results in cases of diabetes are obtained here than in any place in the world. Excellent results are obtained in patients suffering from gastrointestinal disorders. Many people with gouty, diabetic, or lithemic diatheses visit the spring and take a course every year. Their symptoms are so improved that they were enabled to lead their customary sedentary life the rest of the year.

Professor Biggs is a close observer and made thorough examinations, and it is his belief that there is no peculiar efficacy in the water of the Carlsbad springs; that the medical properties of the mineral waters found at most of the health resorts in this country are equally potent to those found in the Carlsbad waters; that the good results obtained come mostly from the restricted and simple diet, the exercise, the freedom from care and the cessation of injurious habits. The only features peculiar to Carlsbad are the traditions which attend it and the large number of people who go there.

THE ADVANCE GUARD.

EDITOR MED. AND SURG. REPORTER:

In the pending discussion between those who assume to represent conservatism and radicalism, respectively, the idea that there can be any middle ground on the subject, or any other than that represented by the extremes, seems to be lost sight of entirely.

It is assumed that conservatives are always conservative, and that so-called radicals are always radical, which idea works great injury to the progress of medical science. But if you accept that part of the definition for conservatism given in the issue of December 24th, which refers to preserving from innovation we will take radicalism every time. To quote again from your correspondent whom, for the sake of brevity, I will refer to as "Conservative." He says "the conservative is the fellow who wants to know before he acts." To reach which point of vantage one must indeed be a very Solon or phenomenon of learning, or else must manifest a large part of his time a position of imposing masterly inactivity. Which latter quality I once heard a prominent

and elderly professional man speak of as one of great importance in professional life. Again, "the conservative is the man who has not only seen many theories die out, old treatment set aside, but new theories wither, new treatment fizzle, etc."

I must say, as much as we all deprecate unguarded and irresponsible action in any profession or science, yet does not any one respect an enthusiast more, who occasionally goes wrong, than the man or woman who stands by "masterly inactive" waiting for somebody else to work out the problems of life and science, and then appropriates the results of their successes and failures to his own great and wondrous credit, vaunting himself as one who is always right because he has not enterprise to go either right or wrong upon his own responsibility?

Are the causes of life and death so sacred and inviolable that they shall not be followed to the inner sanctuary?

Is it proved that the men who represent the so-called radicals in surgery—the men who have done more to advance surgery

in the past ten years than the efforts of previous centuries—are any the less impressed with the sacredness of life or the responsibility of their work? On the contrary it is they who carry the responsibility of almost the whole profession. Their load is such as the dull expectant never dreams of, and for reward they often get only obloquy and abuse. Every man who is not content with watching old theories die out, old treatment set aside, is looked on with suspicion and is considered a rampant radical, quack, or, as a climax to all injurious epithets, he is branded as a *specialist* which is supposed to fill the measure of all opprobrious terms. And this, notwithstanding the fact that almost every advance of any importance in surgery or medicine, has been a radical step away from some preconceived conservative notion. Medical science originally was a system of baseless theories, bolstered up with specious reasoning and unintelligible vocabulary.

The day is at hand, and even now is, when in place of that we shall have an exact science and a intelligible reason for all things.

And the more specialists we have—be they chemists, physiologists, pathologists or surgeons, by whatever name they are known, be they German, English, French, or American—the better. And, however, many hobbies they may ride, one with his *bacillus tuberculosis* and its antidote *tuberculin*; another with his experiments in hydrophobia and anthrax; another with his listerism and antiseptics, the better for the ultimate result. There is some good in all of them. Because, whatever the ultimate result may be, their reasoning does not start from baseless assumptions, and through patient and arduous laboratory work performed not for selfish ends do they accumulate useful information, which, as was said before, is often appropriated by idle beings, who at one time were ready to abuse and accuse of lying, hypocrisy and simplicity those who, at the expense of much time, labor and pains, have contributed to their stores.

All honor to the searchers after truth in whatever line or direction it may be. And all honor to our American surgeons and practisers of the art of healing for they lead the world at this present day. And their position is not one gained by contentedly standing in the old ranks,

pouring over ponderous tomes and argumentative discourses, but by each and every one jostling his fellows, striving for the front rank and to keep at the head of the profession.

As one of our Philadelphia confreres has so aptly said: "It is not so much a ponderous dignity and sick room air that we need, but to know what to do, when to do it and how to do it."

The time has gone by for much abstract theorizing in medical science, but we recognize more and more material agencies, material causes and more and more ought we to get mathematical results. The study of medicine is largely the study of materialism, and that is said to be the reason so many of its votaries become materialists, but such a result is not natural and to the right thinking person the more one studies materialism in the human body the more ought he to grow in spiritual faith.

W. H. BURR, M. D.,

216 W. 9th St., Wilmington, Del.

Rational Treatment of Puerperal Septic Infection.

Dr. J. L. Rothrock (*Northwestern Lancet*) says:

Puerperal infection is caused by two widely different groups of bacteria, which must be distinguished since they necessitate different plans of treatment.

In infection by the pathogenic group of bacteria, local treatment is of little avail, unless instituted early, and it should be vigorously and systematically carried out, even at the risk of being superfluous.

The curette should not be used except in the early stages.

When infection is localized to the uterus and adnexa, recovery is the rule, and tonic and supporting treatment the indications.

If suppuration ensues, the abscess should be drained as soon as the diagnosis can be made with certainty.

Most cases of peritonitis which recover by the expectant plan of treatment are localized.

In sthenic cases of peritonitis, surgical interference is not only justifiable but the rational mode of treatment.—*Am. Lan.*

It takes 4,000 pounds of fresh rose petals to produce 1 pound of attar of rose, or 250 pounds for 1 ounce.

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SATURDAY, FEBRUARY 11TH, 1893.

EDITORIAL.

INNOCENTS ABROAD.

For a long time it was considered 'quite the thing' for the young American physician to feel that life had been a miserable failure until a European trip and a course of study at Vienna had crowned a period of severe, industrious and painstaking work at home.

The diploma from the University of Pennsylvania, from Jefferson or Harvard, was but an ink-splotched and ribbon-bedizened rag, whose Latin hieroglyphics merely served to remind him of the ponies which, in college days, he rode through classic fields; or, more likely still, to emphasize the fact that he had had no college days, but that his education, like Topsy, "had jis growed." His soul thirsted for the rathskellers of Deutschland and his sandaled feet, metaphorically speaking, unconsciously aligned themselves at right angles to the Atlantic Ocean. It was forgotten that of the greatest physicians and surgeons of this country, few ever saw a foreign city or heard a foreign teacher till fame had heralded them for many years; and, that when they did go

abroad they went as honored guests and not as callow students.

In former days a course of study in a trans-atlantic medical center may have added much to both reputation and resource; for clinical instruction was long systematized in European capitals ere, in America, the didactic lecture ceased to be the sole reliance of both teacher and taught.

While clinical teaching is not the basis of *all medical knowledge*, it is the warp and woof of all that is valuable in finishing the practical part of a medical and surgical education. A physician without clinical training, is like a book-made soldier who, while coming to a conclusion according to the latest and most approved authorities, is promptly vanquished by the enemy.

The superior advantages of a European course in practical medicine are no longer visible to the naked-eye, but the mania for foreign titles and foreign degrees has not yet died out. Hordes of American students every year migrate across the At-

lantic seeking diligently to "gild refined gold or paint the lilly," by sitting at the feet of some stupid privat-docent. Fondly imagining that the ancient history they pay so much to hear is a message from on high, which they are the favored ones to carry back to their benighted countrymen. Countrymen, who have either had too much sense, or have been too poor to reap the rich and abundant harvest of wisdom vouchsafed only to those who have been fortunate enough to puff at a meersch-*aum* 'unter den Linden.'

There is some excuse for one, who, attracted by the marvelous results and the wonderful, almost poetic skill of a man like Lawson Tait, wishes to catch a glimpse of the man and of his work. For Lawson Tait is a genius, an iconoclast and a teacher for the ages, a great landmark of his time. It is the running after a set of men whose published statistics show them to be operators inferior even to the average in this country, that fixes the crown of Bottom on the tender brow of innocence.

It is time the world knew, and that all Americans should recognize the fact that surgeons are working right here in Philadelphia, whose skill is unequalled, whose results have never been surpassed, and whose works cannot be duplicated by any man or set of men in Europe. The professional latch-string of these men hangs outside and may be pulled by any deserving man at a moment's notice.

If it is special schools that the young or the old graduate sighs for, surely the polyclinics and the special hospitals of New York and Philadelphia can furnish instruction so varied and material so abundant that the most industrious and ambitious can neither observe nor in any manner utilize it all.

Let American students conquer what we have, before they sigh, Alexander like, for other worlds.

There is no room for snobbery in medi-

cine. A truth developed, a method evolved, a remedy discovered, a disease conquered, or a doctrine put forth in America should produce as profound an impression upon us as if its author enjoyed the delights of existence upon the banks of the Rhine, the Seine, or the Thames.

Truth is universal and knowledge makes the whole world akin. Provincialism is narrow and science is independent of patriotism, yet a decent regard for one's own country and the achievements of one's own countrymen is at all times a laudable spirit. To worship at foreign shrines just *because* they are *foreign* is a more detestable spirit than that mole-eyed selfishness which sees nothing good, hears nothing worthy, and says nothing commendable of any thing or person outside of its own narrow horizon.

The study of medicine should be pursued for the love of truth and for the good of humanity. The desire to shine by borrowed light is a spirit as foreign to the true student's mind, as is a spirit that can see an element of the ludicrous in the maimed and distorted bodies thronging the waiting rooms of physicians, seeking relief from hideous disease and pain.

He who pursues science because he would store his mind with great truths, who has sought admission to the ranks of a great profession because he feels more at home ministering to the unfortunate and the stricken, need go no further than to the metropolis of our own country to see, to hear and to acquire all that can be learned anywhere.

Savings for Servants.

In Germany every servant girl is obliged to own a little blank book for stamps. Once a week the mistress pastes in the book a two-penny-half-penny stamp, which is purchased from the government. When the girl gets old, or should she fall ill, the stamps are redeemed by the government, so that the girl has a small sickness or old age fund. This custom was ordered by the Emperor about two years ago.—*Ex.*

TRANSLATIONS.

Theory of the Phagocytes.

Metchnikoff (*Le Bulletin Medical*, Jan. 22d,) contributes an article on the theory of the phagocytes. He says these cells, that are capable of surrounding foreign bodies by means of active movements, are denominated phagocytes. Sometimes the entire individual is a phagocyte, capable of enclosing the foreign bodies; such are among the protozoans, the amebæ, the rhizopods, and the majority of the infusoria. In certain inferior animals—the sponges for example—the majority of the cells only are phagocytic. The question now arises, in the vertebrates, the mammifera, man, which are the cellular elements capable of manifesting these properties? These elements may be divided into two great groups according as to whether they are mobile or immobile. The *mobile* elements, the most numerous, are confounded with the leucocytes from which they must be distinguished.

The smallest leucocytes, the lymphocytes, which scarcely have the dimensions of the red corpuscles, have a large nucleus which the basic aniline colors stain with great intensity, and very little protoplasm which stains to a much less degree than the nucleus. These are found in large numbers in ganglia, in the corpuscles of the spleen and in the marrow of bone. They appear to be the young stage of leucocytes.

The mononuclear leucocytes, properly so-called, are distinguished from the preceding by large size and method of coloring; their protoplasm, abundant, is pretty well stained by the basic colors; their nuclei, rich in nuclear juice, take a color less pronounced than the nuclei of the lymphocytes; also the difference between the nucleus and the protoplasm is less marked. The nucleus, single, is often oval, may be lobulated and frequently reniform. These two categories only represent a small part of the leucocytes, about twenty per cent. in human blood. The great majority is formed by the polynuclear leucocytes (Ehrlich.) These are round or ameboid cells presenting a lobulated nucleus, but nearly always single:

it is very rarely that they are truly polynuclear. In fact, the nucleus is composed of several lobes united by filaments often extremely minute. These lobes are at times so numerous that the nucleus presents in its entirety the appearance of a mulberry. A very frequent form is the trefoil; at times rays unite all the lobes. The aniline basic colors stain all of the nuclei with great intensity, which resemble, in this respect, those of the lymphocytes. They contain a great deal of chromatic substance and very little nuclear juice. The protoplasm stains very feebly, often not at all, with the basic colors, differing thus from that of the two preceding groups. These polynuclear leucocytes represent 70 to 75 per cent. of the leucocytes. There still remains five per cent. of white corpuscles, represented by those which resemble at times the mononuclear and at times the polynuclear leucocytes, but differ from them in the special staining of the granules which fill the protoplasm. The most of these are represented by the eosinophile leucocytes, the remainder by the cells of Ehrlich.

Ehrlich's cells have their protoplasm filled with granulations which are only colored by the basic coloring matters. These granulations, round, of variable dimensions, have often been confounded with cocci. They may be distinguished by the colorless space in the centre of the mass, which represents the nucleus of the cells incapable of taking any stain. These leucocytes are extremely rare. They are especially found in pathological connective tissues. Some, for instance, in the spleen; they are very numerous in the lymph.

The eosinophile leucocytes have an oval or lobulated nucleus—thus analogous to those of the polynuclear—which is well stained by the aniline colors. With no basic color whatever are the granulations stained, even feebly. It is of no consequence what acid color, on the contrary, may be used, however diluted, but the granulations are very strongly stained and fill nearly the entire cell, leaving very little room for the protoplasm. The eosinophile leucocytes are always found in the blood of vertebrates. They sometimes have an elongated form, sometimes a crys-

†Translated for THE MEDICAL AND SURGICAL REGISTER by W. A. N. Dorland, M. D.

talline appearance, particularly in certain reptiles and birds. They represent four or five per cent. of the white corpuscles of the blood and are especially prevalent in the marrow of bone.

In certain animal species, the rabbit and the wolf for example, but never in man, cells are found with granulations stained by eosine, which have been confounded with eosinophile leucocytes. Their granulations are smaller and in much smaller number, rarely filling the entire cell. These granules also take the basic colors, which is never done by the true eosinophile leucocytes. These cells have been denominated pseudo-eosinophile or amphophile. To distinguish them care should be taken not to leave the preparation a long time in the basic bath. In man, who has not these amphophile cells, a variety is found, without doubt corresponding, with granulations which are only colored by an acid and basic mixture; they are the neutrophiles.

In several species of mammifera—in the dog among others—no species of cells with granulations is found; it may be that they exist, but that the method of coloring them has not yet been discovered.

Which of these classes present phagocytic properties? Neither the lymphocytes, nor the eosinophiles, nor the cells of Ehrlich ever contains, in spite of their ameboid movements, foreign bodies, a truth which proves, it may be said in passing, that the pretended viscosity of the ameboid cells is not the cause of the encircling. Only the mononuclear, the polynuclear, the amphophiles and the neutrophiles enclose foreign bodies. According to the case, it is the one or the other category which plays the principle role.

In studying tubercle we have seen along side of the white corpuscles equally capable with them of enclosing foreign bodies, some immovable cells—the endothelial cells of vessels and nervous membranes—which present great analogies to them. Their protoplasm is stained by the basic colors as well as their nuclei, in which the nuclear juice is very abundant. When these cells are detached from the vessel walls and carried into the blood current, they are often difficult to distinguish from the leucocytes.

The analogies between these different

groups of cells with large nuclei, single, are so great that they have been united under the general name of macrophages, reserving that of microphages for white polynuclear globules capable of surrounding foreign bodies. All of these phagocytic cells present the common characteristic of being derived from the mesoderm. In the muscular and nervous tissues there are other fixed phagocytic elements more specialized. In the muscular fascicles it is not the myoplasm, but only the interstitial substance or sarcoplasm, which fills the phagocytic function; as may be noticed in certain pathological cases, where the sarcoplasm, forming a large number of buds, surrounds, destroys, digests the myoplasm. The cells of nervous ganglia also manifest phagocytic properties and, it is probable that the cells of the neuroglia also have analogous properties.

What relations have these phagocytes with the micro-organisms? The phagocytes are endowed with a certain sensibility denominated chimiotaxia. They discriminate between foreign bodies and do not encircle them indifferently. Especially is this manifested towards various bodies in solution, and above all towards substances of bacteric origin. If, after the introduction of microbes into the organism, there is produced at first a considerable leucocytosis, and if the leucocytes direct themselves in large numbers towards the point of introduction, it is said that there is a positive chimiotaxia. If, on the contrary, the number of the white corpuscles diminishes, and if, at the point of introduction there is formed a simple serous exudate without leucocytes, it is said that there is a negative chimiotaxia. The more receptive an organism is the more is the negative chimiotaxia manifested; the more refractory an organism is, the more is the positive chimiotaxia noted. If by vaccination a very sensitive animal is transformed into a refractory, the chimiotaxia, at first negative, becomes positive.

The encircling of microbes by the leucocytes is an active protoplasmic act and not simply mechanical due to a pretended viscosity of the protoplasm. It is a physiological act on the part of the leucocytes and not on the part of the microbes. Metchnikoff has seen a very mobile spirilla in relapsing fever unable to introduce itself into the globules. The process then

may be compared to an intra-cellular digestion, and in the process a difference in the method of fixation of the colors may be seen. The microbe, at first quite colorless, colors all at once with a great intensity, a proof of its death; then, little by little, the color disappears until it finally disappears entirely. Therefore the phagocytes surround and digest the microbes. If some leucocytes enclosing microbes are transported to a drop of nutritive substance, in a little while the leucocytes die, while the microbes, finding a favorable medium for their development, multiply in the interior of the phagocytic cell. Very soon this is filled, the peripheral protoplasmic bed is traversed and the microbes diffuse throughout the liquid. This is proof incontestible that the microbes have been encircled while living. The tubercle bacillus is distinguished by its great resisting power to this action. It is surrounded; sometimes it may be digested, but more often it resists, ends even by destroying the cell, and then is able to invade the organism.

The spores of the bacteria often resist the destructive action. Sometimes they may be digested, as, for example, those of the bacillus of tetanus. But more often they are not affected, the bacilli themselves being destroyed. This shows that in certain cases the phagocytes are protectors and not in others. This clearly demonstrates that it is the cellular elements, the phagocytes, which retard invasion and not the liquids of the organism. The principle method of defense of the organism then is the phagocytic action. Perhaps there may be other methods; it is very probable. At any rate it seems to be very clearly demonstrated that this protective power should not be ascribed to the humors of the body, which in general, and even in protected individuals, are an excellent medium of culture.

Radical Operation for Umbilical Hernia.*

R. Condamin., (*Arch. prov. de Chir. T. I., p. 193*). The tendency of umbilical hernia to become larger or to produce pain of often a functional or sympathetic character, together with the difficulty or

impossibility of keeping in place by bandages, makes it necessary to study carefully the technique of radical operation. C. has found it more satisfactory to make a total extirpation of the umbilicus, to freshen the inner marginal sheathes of both recti, and uniting the abdominal wound by three rows of sutures. The first unites the peritoneum, the second (which is of the greater importance) unites the two opposite leaflets of the recti. The third unites the skin.

In order to insure close apposition of the various parts, he recommends placing a silver suture deep in both angles of the wound.

Peptonuria in General Paralytics.†

The greatest discord as to the pathology of peptonuria exists among alienists as well as among practitioners. In general paralysis, Maccabruni has only seen it four times in forty-five patients. Marro found it in every instance in twenty-two patients. Fronda has had under observation seventeen paralytics and has made twenty-eight analyses of the total urine of the twenty-four hours; three times the peptonuria was not found at one or two analyses, but was noticed subsequently. A fact worthy of note is that it was not present once during a period of excitation but appeared during a period of calm. This is contrary to the usual hypothesis, according to which it should be produced and eliminated more during cerebral activity.—R. Fronda, (*Il Manicomio Moderno*, Anno VII, No. 1, 1892, pp. 1 to 18).

Not Deserving of Recognition.

"By the way," said the gentlemanly looking person in the black broadcloth suit, "if you mention my name in connection with the accident you may say that 'Dr. Swankem was called and the fractured arm was suitably bandaged,' or something to that effect. Please spell the name correctly. Here's my card."

"Thanks," said the reporter, looking at the card. "You are next door to Dr. Rybold, I believe. Are you acquainted with him?"

"No, sir," replied Dr. Swankem, stiffly. "We do not recognize Dr. Rybold as a member of the profession. He advertises."

*Translated for THE MEDICAL AND SURGICAL REPORTER, by Marie B. Werner, M. D.

†Translated for MEDICAL AND SURGICAL REPORTER, by W. A. N. Dorland, M. D.

BACTERIOLOGICAL NOTES.

The Growth of Bacteria through the Pasteur-Chamberland Filter.

The fact has been asserted for a considerable time that the Pasteur-Chamberland filter was not proof against bacteria. This was disappointing as it was hoped by all, and believed by many, that the Pasteur filter would remove all organic, as well as inorganic, material from the water which passed through it. Several tests have been devised for proving the passage of bacteria through the *bougie* of the filter. Smith and Moore (*Centralblatt f. Bakteriologie Parasitenkunde* xii., 1892, p. 628) describe an extremely simple method. A bougie from an ordinary Pasteur filter is inverted in a large glass tube the top of which is plugged, about the bougie, with cotton. It is then sterilized by dry heat. A culture of the germ to be tested, which has grown for a few hours only, is transferred to the tube by means of a sterilized pipette. By means of air pressure a portion of the liquid is forced through the bougie into the tube. The filtered liquid is perfectly clear. The entire apparatus is then placed in an incubator. The filtered culture liquid in the tube will remain clear until it is rendered turbid by the multiplication of bacteria which have grown through the walls of the *bougie*. The authors found that the hog cholera germ would grow through the tube in from five to ten days. The experiments made were sufficient to show that the pores in the tubes are large enough to admit of the passage of bacteria the size of the cholera spirillum or the typhoid bacillus. They also show that there is a difference in the pores of different tubes. [These facts confirm in a measure the statement of M. Dujardin-Beaumetz that, "filters are of no use whatever, and thus another cherished illusion is likely to disappear." The fact should be borne in mind that, thus far, there has been no filter devised that is capable of turning out water "germ free" after it has been in use for a considerable time. The only safe and reliable method of obtaining wholesome drinking water is, if the water is cloudy from holding earth in suspension, to filter it to remove the dirt, boil it to destroy the bacteria and keep it until used in a sterilized vessel placed in a refrigerator. This is impor-

tant at all times, but more especially during the coming season when cholera may dangerously contaminate the water supplies in many sections of our county.—Ed.]

The Micrococcus Lanceolatus, with special reference to the Etiology of Acute Lobar Pneumonia.

Prof. Welch (*Bulletin of the Johns Hopkins Hospital*, iii, 1892, p. 125) has begun a series of articles on the etiology of lobar pneumonia which will be welcomed by all physicians. The first part consists of a review of the discovery of the germ by different investigators, and an exhaustive discussion of its morphology, biology and effect upon experimental animals. A complete list of the synonyms is also given. *Micrococcus lanceolatus* is preferred from the fact that the names, pneumococcus, micrococcus pneumoniae crouposa, and diplococcus pneumoniae suggest an exclusive relationship of the organism to acute croupous pneumonia, whereas this same organism is concerned in the causation of cerebro-spinal meningitis and many other affections independent of pneumonia. The germ was first discovered by Sternberg in 1880, by inoculating rabbits with his own saliva. It was next found by Pasteur three months later. Within the next few years the germ was discovered and named by a large number of investigators. It was found not only in the sputum but in lungs affected with croupous pneumonia. The two discoverers whose names are most frequently associated with the germ of pneumonia are Friedländer and Fraenkel. Friedländer's pneumococcus, however, has not been demonstrated as bearing any relation to pneumonia whatever. Morphologically the micrococcus lanceolatus is an oval organism with one end somewhat smaller and more tapering than the other. In cultures oval and frequently spherical forms can be found. The average length of the germ is about 1-1.5 μ its thickness from $\frac{1}{3}$ to $\frac{1}{2}$ that of its length. Its typical form is transitional between a coccus and a bacillus. By Flügge it is called a bacillus, and Beck, of Koch's Institute, calls it the diplo-bacillus of Fraenkel. The author retains the name micrococcus

instead of bacillus on account of the customary usage. The cocci are arranged in pairs usually, frequently in short chains.

Welch found that from cultures of typical diplococci he could sometimes obtain, in later generations, non-virulent streptococci which could not be distinguished from some cultures of the streptococcus pyogenes. If this germ of pneumonia occurs under natural conditions in similar chains there seems to be no way of separating it from some other varieties of streptococci. As an aid to diagnosis there are three characters which, if carefully observed, may render the identity of the germ reasonably certain when it is examined in cover-glass preparations made from the tissue, these are: (1) the lanceolate shape; (2) the paired arrangement; and (3) the presence of a capsule surrounding the organism. The capsule can be demonstrated around the germs growing in the tissues and liquids of the animal body. The capsule is frequently demonstrated when the germs have been developed on blood serum and agar and in milk and bouillon. Welch found that degeneration and involution forms of the micrococcus lanceolatus were common in cultures and in the animal body especially in old inflammatory exudates. The most interesting of these forms were empty capsules and capsules containing feebly or unstained cocci, or deeply stained particles in stained preparations.

The micrococcus lanceolatus grows best at a temperature about that of the human body. It can be cultivated on all of the ordinary culture media. Gelatine is not well adapted for obtaining the first cultures, as the growth is not sure at a temperature below its melting point. Slight variations in the composition of the media or its chemical reaction will often deter and frequently check the development of cultures. The media should be feebly alkaline. It does not liquify gelatine; milk is usually soured and coagulated; a small quantity of acid is produced in bouillon; no growth or a faint grayish growth on potatoes; it is facultative anaerobic growing without as well as with the presence of oxygen. The maximum development in cultures, at the body temperature, is attained in twenty-four hours or less.

The virulence of the pneumonia germ is variable. Cultures were obtained that

were devoid of any virulence. They were also obtained so virulent that a very small quantity was capable of killing rabbits by septicæmia in less than twenty-four hours. Mice were more certain to die than rabbits. Guinea pigs and dogs were much less susceptible than mice and rabbits. Rats and cats were still more resistant, but could be destroyed by larger doses of the virulent cultures. Chickens and pigeons are insusceptible. The pathological effects of large and smaller quantities of the virus when inoculated into all of the susceptible experimental animals are carefully described.

The Differentiation of the Typhoid and the Coli Communis Bacilli.

Wurtz (*Le Bulletin Med.*, 1891, No. 100, p. 1155) gives a very simple method of distinguishing between these bacilli. If they are cultivated on a solid medium containing lactose and sufficient litmus to give it a blue color, the results are as follows: In the culture of the typhoid bacillus the color remains unchanged, while in the culture of the coli communis bacillus the lactose is converted into lactic acid which changes the color produced by the litmus from the blue to a red.

From the investigations of Chautemesse and Widal it is known that, upon solid media upon which the typhoid bacillus has grown for at least eight—ten days and the growth removed from the surface, that a subsequent inoculation with the typhoid germ will not develop, while an inoculation with the coli bacillus will produce a vigorous growth. [After studying the morphology of the suspected germ, and its growth in gelatine rolls, which is quite characteristic of the coli bacillus, a very conclusive test is to cultivate it in bouillon containing two per cent. glucose, in a fermentation tube. The typhoid germ will produce no gas while the bacillus coli communis will produce a considerable quantity of gas which will collect in the closed end of the tube.—Ed.]

PULMONARY HEMORRHAGE.—If severe, raise the thorax, administer opiate; gallic acid, fifteen grains, every fifteen minutes; ergotin, five to ten grains hypodermically, two or three times daily; ice bags to the chest; as a last resort a ligature may be thrown around the larger limbs. (*Tyson*).

ABSTRACTS.

PATHOLOGY OF CARCINOMA.*

Dr. H. C. Coe read a paper on this subject before the New York State Medical Society. The reader introduced his paper by a reference to the great interest which had been aroused in cancer within the past five years and the hope that its mystery would be solved by the aid of bacteriology.

Various theories have been advanced regarding its nature, many of which were fanciful, others quite suggestive. These were viewed in turn down to the latest investigations on the parasitic origin of the disease. They all contained the central idea that the disease was in the nucleus of the cell itself, the cell being really infectious. Under certain degenerative conditions the normal epithelial cell might be susceptible to external infection, perhaps by the entrance of coccidia and thus assume a new malignant character. Metastasis was simply infection in distant localities by cells carried through the lymphatics from the parent growth. It should be carefully distinguished from direct extension of cancer to the tissues surrounding the neoplasm; this distinction was important from a surgical standpoint. Cancer was formerly regarded as a "cachexia," but this term was now rejected, the condition being simply a depreciated condition of the general system such as was present in all wasting diseases. Cancer like tuberculosis might be local or general.

Heredity was a factor of minor importance. Even persistent local irritation must be supplemented by some degenerative process in the epithelial cells at the point of irritation. The same applied to the cancerous transformation of benign neoplasms. The inflammatory changes *within* a cancerous tumor were essentially destructive, while those *around* it might be conservative, limiting the extension of the disease. It had been shown that outlying groups of cancer cells might be destroyed by an acute inflammatory process. The following practical deductions were made: The possibility of general or constitutional prophylaxis was purely theoretical. "Local" prophylaxis

consisted in the prompt removal of a suspicious growth or tissue in the pre-cancerous stage, i. e., while it was still merely suspicious—as in the case of the eroded cervix uteri. It was possible that a specific might yet be found, such as had been sought for tuberculosis, etc.

Surgically the only rule to follow was *early and complete removal* of the cancerous neoplasm, even at the risk of subsequent deformity. Since it had been demonstrated that inflammatory processes might actually destroy groups of cancer cells within adjacent healthy tissue, union by first intention might not be so desirable as has been thought. The ultimate condition of the patient was the first consideration, not the rapid and non-suppurative healing of the wound. Patients must be educated to the necessity of radical removal of the growth at its incipient stage if a radical cure is to be expected. Reference was made to Robinson's and Byrnes's results with caustics and the galvano-cautery. With regard to the palliative treatment of cancer by operations enough praise could not be bestowed upon the results of modern surgery. With greater knowledge, increased skill and improved technique, these would continue to improve. We were not justified in holding altogether pessimistic views with regard to the surgical treatment of cancer.

The reader concluded with a tribute to the pathologists whose work was too often undervalued by practical surgeons, but to whom Medicine was indebted for the wonderful advance which it has made in the past decade.

"Why are you so naughty, Johnnie? It seems to me that with mamma worn out, and papa with a broken arm, you might try to be good."

"Hoh!" said Johnnie. "That's just the time to be bad. No one can lick me for it."

"Going up to Bradley's for Sunday?"

"Yes."

"Well, look out for squalls."

"Why? Bradley's not quarrelsome."

"No; but he has a new baby."

*Special Correspondent to THE MEDICAL AND SURGICAL REPORTER.

CURRENT LITERATURE REVIEWED.

THE VIRGINIA MEDICAL MONTHLY

for February contains a paper by Dr. W. P. C. Hazen on

A Question Relative to the Treatment of Diphtheria.

After reviewing the opinions of various observers, the author concludes that the disease heretofore called diphtheria should be looked upon "as two distinct diseases, namely diphtheria, resulting from the action of the Klebs-Loeffler bacillus, and pseudo-diphtheria, resulting from the presence of other organisms." On agitating a doubtful membrane gently in water, if it does not fall apart, but remains in resisting and elastic layers, there is no doubt that it is diphtheritic. The absence of the knee-jerk is said also to be proof positive of diphtheria. In the treatment, he advises spraying the throat with peroxide of hydrogen, followed in an hour by the application of a five per cent. solution of the oleate of mercury—the hydrogen peroxide being alternated every hour with the mercury. The oleate of mercury serves the same purposes as the bichloride, without its irritant qualities. In the internal administration of remedies, the practitioner must be guided by circumstances and his own good sense. With the exception of stimulants, there are no medicines the author would particularly recommend. Iron he regards as useless.

Dr. William R. Howard contributes a paper on

Puerperal Infection

the direct cause of which are microbes and their products, ptomaines and leucomaines. The author rightly regards prophylaxis as most important. Strict antiseptics in the delivery, the avoidance of lubricants—soap, oils and fat, and as few examinations as possible are his rules. In the treatment he considers antiseptic intra-uterine douches of value in the early stages. The uterus should be scraped with a blunt curette if there is reason to believe that there are shreds or decomposing clots in the cavity, but after the inflammation has extended to the tubes, ovaries, peritoneum, etc., he rightly considers curetting useless and condemns the procedure. Quinine in four to six grain doses should be given every four to six hours. He does not believe in the use of Epsom or Rochelle salts, stating that little is needed to move the bowels other than an occasional enema, which may contain turpentine if much flatus be present. [In our experience, we have found that free purgation by means of a saline, has removed seemingly threatening symptoms.—Ed.]

Dr. James Kerr, in an able paper, discusses "Laparotomy in Shot Wounds of the Abdomen." The "ostrich plan" of giving opium and making the patient comfortable is mentioned only to be condemned. The literature of the subject is carefully reviewed, as is also the technique of the operation. The

paper includes the report of two cases operated on by the author and a table of operations to date.

Dr. F. Pearson contributes a paper on

The Food of Cholera Germs.

According to the author, cholera epidemics in the United States have occurred in places where limestone water abounds. His conclusion is that there is a deposit formed by the water in the intestinal canal which is peculiarly favorable to the nutrition of the comma bacillus. He mentions the observation of Dr. R. G. Curtin, at the Philadelphia Hospital, that those persons drinking a lemonade of weak sulphuric acid were not attacked by the disease. According to the author, the reason for this immunity lies in the fact that the intestinal deposit of lime will be broken up and dispelled by the acid. The paper also points out the fact that it is not always the filthiest community which suffers most severely from the cholera.

Dr. J. C. Hurst considers the subject of the

Etiology of Decay in Teeth,

pointing out the fact that inorganic material is necessary for the proper maintenance of the enamel. In our civilization, we have almost completely banished inorganic substances from our chief article of food—bread. The refinements of milling flour have totally removed all the bran, in which all the inorganic material principally exists. The remedy, according to the author, lies in a return to the coarser bread of our forefathers. "In our bread, let the entire grain enter—bran and all—at each meal. Then, not until then, will we die that death which is a physiological process, with a mouth full of healthy teeth."

Dr. H. Augustus Wilson describes

A Simple Tourniquet Clasp

for the elastic tourniquet or the Esmarch's bandage. In shape it is like the letter S and is used by being fastened by its middle bar to one end of the tourniquet, the free end of the tourniquet being slipped under the upper and lower loops of the letter as in an ordinary buckle. By its means, compression may be made without using the whole length of the strap, as is necessary in the ordinary variety, furnished with a chain and hook for fastening. The instrument is made out of $\frac{1}{4}$ inch German silver wire.

Dr. H. Berlin in an article on "The Albumen Reaction—Resemblance of Piperazine in Urine," points out the fact that such urine gives the albumen reaction with the picric acid test. It is said not to do so with the nitric acid test.

Other articles in this number are: "Foreign Bodies in the Eye," by Dr. S. Latimer Phillips; "Some Points in the Diagnosis of Cutaneous Diseases," by Dr. James C. McGuire; and "Concerning the Use of Cocaine in Enucleation of the Eye," by Dr. John Dunn.

Under Clinical Reports, Dr. H. P. Wenzel reports an "Aneurism of the Aortic Arch" which ruptured into the oesophagus, causing death almost instantly. Dr. Mark W. Pryor Peyser reports a "Case of Shoulder Presentation," necessitating embryotomy, and which was followed by the death of the mother on the tenth day from peritonitis, "due probably to the escape of the lochia through the fallopian tubes."

THE ST. LOUIS MEDICAL AND SURGICAL JOURNAL

for January, contains a paper on "The Medical Corps of the Army and Navy of the Confederate States." The formation, number and services of the medical staff of the Confederacy during the war are narrated, and a high tribute paid to the men who labored hard for the relief of suffering on the Southern side.

Dr. John W. Trader utters a solemn word of warning against

Gynecological Excesses

in a paper read before the Pettis County Medical Society in November last. The author thinks that the mind of womankind is too generally directed to the organs of generation as the *fons et origo* of their ailments, and therefore a pelvic examination is too often demanded of the gynecologist by the patient and undue treatment is inflicted on the long suffering uterus. He thinks women are apt to boast of this or that operation having been performed on them. "Jenny had her womb straightened by Dr. Blank" is too often the boast of the mother. Luxury, and the licen-

tiousness bred of luxurious living, come in for their share of blame. Education of men and women in regard to the sacredness of their bodies and the teaching of purity in thought and deed would do much to diminish the work of the specialist in the diseases of women.

"Optometry" is the title of a lecture by Dr. Flavel B. Tiffany, delivered to the class at the University Medical College of Kansas City. The various eye tests and the instruments used are described. The paper is illustrated by cuts of instruments and photographs of the methods of use.

This number concludes with a lecture by Dr. Thomas J. Mays on "Asthma." Strychnia, hyperdermically or by the mouth, is advocated in the treatment and a number of cases are reported.

THE COSMOPOLITAN FOR FEBRUARY.

This magazine is rapidly gaining an international reputation as one of the foremost of American publications. The more interesting of the articles include an illustrated essay on naval construction, showing its evolution from the galley of the Spanish armada to the battle ship of to-day; a fanciful sketch "June, 1993," which is a not very good romance of the "Looking Backward" style; an instructive article on the A. T. and S. F. R. R., and several short stories. Other leading articles are "Monte Carlo," a handsomely illustrated sketch of this great gambling resort; "Sugar from Sunbeams," telling how beet sugar is made, and a eulogistic article on Blaine. It is certainly a quarter's worth this February Cosmopolitan.

PERISCOPE.

THERAPEUTICS.

Substances Incompatible with Antipyrine.

The following substances precipitate antipyrine from its aqueous solutions:

- (1) Concentrated solutions of carbolic acid.
- (2) Tannin, and preparations containing tannin.

- (3) Tincture of iodine.

- (4) The chlorides of mercury.

The following substances, when triturated with dry antipyrine, decompose it:

- (1) Calomel, which forms a toxic compound with antipyrine.
- (2) Beta-naphthol.
- (3) Choral hydrate, which forms an oleaginous liquid with it.
- (4) Sodii bicarbonas, which when brought in contact with it sets free an odor of acetic ether.
- (5) Salicylate of soda, which also forms an oleaginous compound with it.
- (6) The salts of quinine and caffeine, which have their solubility increased by antipyrine.—*Gaz. des Hopitaux.*

Subcutaneous Injections of Normal Nerve Substance in Epilepsy and Neurasthenia.

Babes (*Deutsch. Med. Woch.*, July 28th, 1892) records the results of this method of treatment in a large number of patients. Normal brain and spinal cord were made into an emulsion with broth in the proportion of 1 gramme of the nerve tissue to 5 grammes of broth. Of this 4 to 5 grammes were injected in the abdomen or flank five to six times a week in epileptics, and four to five times a week in neurasthenics. A large number of epileptics were cured, and others greatly improved. Good results were also obtained in melancholia, neurasthenia, and cases of slow heart action. A case of sleeplessness, in which all known narcotics, even in large doses, had failed, was cured after three injections. A patient with cephalalgia of over a year's duration was remarkably improved after seven injections. Syncopal attacks and a paralytic condition in another patient disappeared after sixteen injections. Sciatica of a month's standing was cured by three injections.

After-Effects of Chloroform.

Luther (*Munch. Med. Woch.*, January 3rd, 1893.) says that changes are found in the kidneys after death by chloroform, however, produced. He says that after almost every administration, especially if prolonged, albumen and casts appear in the urine. The author has found that (1) the urine was normal when no after-effects, such as vomiting, etc., were present; (2) of many cases examined the after-effects were most marked in the single case in which abnormal constituents were found in the urine; (3) albuminuria and cylinduria go hand in hand, and disappear after a few days, and (4) the casts are mostly hyaline. He concludes for these reasons that (1) the use of chloroform should be limited to cases where it is necessary; (2) in every case before prolonged narcosis the urine should be examined, renal disease being a more important contra-indication than heart disease (except fatty heart); (3) chloroform narcosis should be restricted in the case of the pregnant and lying in, and it should be absolutely avoided in eclampsia, since it must be prolonged, and the kidneys are nearly always diseased; and (4) mild diuretics are of value in the after-effects of chloroform.

The Effects of Acids on the Functions of the Stomach.

1. Acids throw down a considerable precipitate of mucus.
 2. They increase the cellular elements of the gastric contents.
 3. Their introduction is followed by butyric-acid reaction, most marked after hydrochloric acid.
 4. Larger quantities of the acids result in a considerable effusion of bile into the stomach.
 5. They stimulate the secretion of pepsin, but have no influence upon the secretion of hydrochloric acid.
 6. Their long-continued administration is followed by marked diminution of the secretion of hydrochloric acid.
 7. Even in large quantities hydrochloric acid produces no gastric disturbances. On the contrary, a continued administration of the acid is attended with a feeling of well being.
 8. The difference in the effect between acids and the alkaline salts on the gastric functions consists in the fact that the alkaline salts dissolve the mucus and decrease the secretion of pepsin, while the acids precipitate the mucus and increase the secretion of pepsin.
- The disappearance of the alkaline salts from the stomach is followed by a decided increase of the hydrochloric acid secretion. This does not occur, or only to a slight degree, in the case of acids. Both the acids and salts, in large quantities in continued use, have the same effect in lowering the activity, and finally in destroying the function of the glands secreting hydrochloric acid.—*Jaworski, in Centraltablatt für Klin. Med.*

MEDICINE.

Antisyphilitic Treatment—Proper Duration.

This is one of the most interesting and, as is well-known, most disputed questions of medical practice. The physician is often puzzled in making a proper choice, and in the end, and after much hesitation, generally decides upon what, in his experience, has been the mean duration of treatment. But how often do we see patients who, after having been under medical supervision for a length of time, abandon the doctor to treat themselves—believing themselves to have a sufficient experience to permit them to do so, and thus destroy their constitution by a too prolonged use of mercurials when the latter are no longer indispensable, yea, often even harmful!

In a communication to the Paris Societe de Therapeutique, Dr. Bonetemps, of Saumaz, supported the doctrine of Prof. Fournier, who asserts that in no case can the duration of the antisyphilitic treatment be fixed at less than three or four years. As, at the same time, the patients ought to observe in the medication certain alterations and periods of repose or dishabitation, Dr. B. has arranged the following table, a convenient *va-de-mecum* for the practitioner:—

First Year

6 months of mercurial treatment,
3 months of potassium iodide,
3 months of repose.

Second Year

2 months of mercury,
5 months of iodide,
5 months of repose.

Third Year

2 months of mercury,
5 months of iodide,
5 months of repose and sulphur baths.

Fourth Year

No mercury.
Potassium iodine with intervals of
Repose and sulphur baths.

Merck's Bulletin.

The Use of Strychnine and Digitalis in Diarrhoea.

In fevers of a remittent character Mr. Hendly says, the complication of persistent diarrhoea occurred frequently, and at periods when the patient was worn out by fever, and the digestive powers were rapidly failing, I determined to use these drugs to combat certain symptoms. In these cases the temperature ranges from 1° to $2\frac{1}{2}^{\circ}$ above normal, the pulse is soft and yielding, not very rapid, and markedly wanting in tone; the motions four or five daily, increase in number until nourishment appears to excite an action of the bowels, marked by even a greater tendency to fluidity, the extreme being reached when the motions escaped involuntarily, and is followed by a tendency to cardiac failure, if not collapse, frequently accompanied by a consciousness of approaching dissolution in the patient. Digitalis was chosen for these cases because of its well-known general action upon the vaso-motor system; strychnine for its less known more direct action

upon that portion of the system concerned in the control of the blood supply to the intestines. The mixture employed was tr. digitalis, *miv*; liq. strychnia, *mij*; spts. chloroformi, *mv*; in water, and repeated at from one to four hourly intervals.—*The London Practitioner*.

SURGERY.

A New Method of Gastro-enterostomy.

Postnikow, of Moscow (*Centralbl. fur Chir.*, No. 49, 1892) describes a method of performing gastro-enterostomy in which the establishing of a free communication between the stomach and duodenum is postponed until the third or fourth day after the date of operation. The following are the stages of this method, which has been tried with complete success on seventeen animals:—(1) Incision of the abdominal wall; (2) attachment of the selected loop of small intestine to the anterior wall of the stomach by sutures passed beneath the serous coats; (3) excision of a small oval piece from the wall of the stomach as far as the muscular layer, and of a similar piece of the same depth from the wall of the small intestine; (4) union by means of sutures of the posterior edges of the raw surfaces thus established on the stomach and the loop of small intestine; (5) constriction by the silk thread of the portions of mucous membrane protrude at the wounded surfaces of the stomach and small intestine after removal of the serous coat; (6) union by sutures of the anterior edges of the opposed raw surfaces; (7) application of a second row of sutures passed beneath the serous coats; (8) closure of the external wound. In this operation the mucous membrane of the stomach and small intestine is not incised, but is closely constricted by two ligatures which, by causing gangrene of the protruded portions of these coats, and consequent separation, establish a free communication between the adherent parts of the gastro-intestinal tract. Postnikow states that by this method the escape of faecal matter into the peritoneal cavity is prevented, the duration of the operation is shortened, and the necessity for washing out the stomach avoided.—*Br. Med. Jour.*

Transplantation of Bone.

Kapper (*Wein Med. Woch.*, No. 45, 1892) relates the following case. A strong, healthy woodcutter, aged 19, had been injured by the falling of a tree; a piece of wood pierced the right parietal region, he became insensible for a short time, and was taken to a hospital. There he suffered from pains in the head, and the injured part became much swollen. Eight days afterwards he left the hospital of his own will. Immediately after leaving the patient was seized with pain in the head, in the right eye, and in the wound. Ten days after the accident he came under Kapper's care. He then presented a wound the size of a shilling in the anterior part of the right parietal region, which was swollen, red and covered with granulations, and from which

yellow pus was being discharged. The patient was narcotised and the wound enlarged; then the underlying bone was found to have an aperture in it from which exuded a quantity of yellow pus. This aperture was widened with a chisel, and between the cranial vault and the dura mater a piece of hard wood 3 cm. long, 2 cm. wide at its base, and $\frac{1}{2}$ cm. thick was found implanted. This was removed, and the parts thoroughly cleansed; the wound was then drained and dressed with iodoform gauze. At the end of eleven days the wound was quite healthy. At this time the wound was opened up, and the cranial bones of a young goose several days old taken, cut up into eight small flattened plates, and then placed in the bottom of the wound upon the dura mater so as to fill up the defect in the bony wall of the skull; dressings of iodoform gauze were then applied and left on for ten days. On removing the dressings the bone had become partially consolidated. A few weeks afterwards the wound had completely healed, and the hole in the parietal bone was quite filled up with the newly formed bone.—*Br. Med. Jour.*

NEWS AND MISCELLANY.

State Board of Medical Examiners of New Jersey.

Candidates applying for a license (after the July, 1893, meeting of the State Board of Medical Examiners) to practice medicine in New Jersey, will be examined in the following subjects arranged in sections as follows, viz: Sec. 1, Materia Medica and Therapeutics; Sec. 2, Obstetrics and Gynecology; Sec. 3, Practice of Medicine (including diseases of the Skin, Nose and Throat); Sec. 4, Surgery (including Surgical Anatomy and diseases of the Eye, Ear and Genito-urinary organs); Sec. 5, Anatomy; Sec. 6, Physiology; Sec. 7, Chemistry; Sec. 8, Histology, Pathology and Bacteriology; Sec. 9, Hygiene and Medical Jurisprudence.

The following percentages will be required, also, after that date, before a license will be issued, viz: Candidates examined in the first class, i. e. graduates of five years or more, shall obtain a total average of eighty (80) per cent.; candidates examined in the second class, i. e. graduates of less than five years, shall obtain a total average of seventy-five (75) per cent., providing that in no one section shall the percentage be less than thirty-three and one-third ($33\frac{1}{3}$) per cent., in which case, however, should the total average percentage in all the other sections, be above seventy-five (75) per cent., the candidates may be granted a second examination, immediately, upon that section. Candidates examined in the third class, i. e. non-graduates, who have taken three full courses of lectures in a reputable Medical School shall obtain a total average of eighty (80) per cent., and candidates taking their preliminary or final examination shall obtain a total average of eighty (80) per cent., at each of said examinations.

TREASURY DEPARTMENT.

Office Supervising Surgeon-General, Marine-Hospital Service,

WASHINGTON, D. C., Feb. 11, 1893.

A board of officers will be convened at Washington, March 20, 1893, for the purpose of examining applicants for admission to the grade of Assistant Surgeon in the U. S. Marine Hospital Service.

The following is the usual order of the examination: 1, Physical. 2, Written. 3, Oral. 4, Clinical.

In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and when practical candidates are required to perform surgical operations on cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order, as vacancies occur.

Upon appointment the young officers are as a rule first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years service, Assistant Surgeons are entitled to examination for promotion to the grade of Passed Assistant Surgeon.

Promotion to the grade of Surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant Surgeons receive sixteen hundred dollars, and Passed Assistant Surgeons eighteen hundred dollars, and Surgeons twenty-five hundred dollars a year. When quarters are not provided, commutation at the rate of thirty, forty, or fifty dollars a month, according to grade, is allowed.

All grades above that of Assistant Surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' services up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address,

WALTER WYMAN,
Supervising Surgeon-General,
U. S. Marine Hospital Service,
Washington, D. C.

The Section on Laryngology and Rhinology of the Pan-American Medical Congress is now thoroughly organized with secretaries in all the countries of South America as well as in the United States and Canada.

The President, Dr. E. Fletcher Ingals, of

Chicago, is making a thorough canvass to secure a large number of good papers for the Section, and aided as he will be by the able Secretaries, Drs. Murray and y Alonso, and the corps of honorary presidents he feels assured of the success of this department of the Congress. All physicians interested in this Section are requested to correspond with the secretaries for the United States.

DR. J. MARON Y ALONSO,
(Spanish Speaking),
Las Vegas, N. M.

DR. T. MORRIS MURRAY,
(English Speaking),
Washington, D. C.

ARMY AND NAVY.

FROM FEBRUARY 5, 1893, TO FEBRUARY 11, 1893.

A Board of Medical Officers, to consist of Colonel Charles H. Alden, Assistant Surgeon General, U. S. Army; Lieut. Col. George M. Sternberg, Deputy Surgeon General, U. S. Army; Major John Van R. Hoff, Surgeon, U. S. Army.

Captain Guy L. Edle, Assistant Surgeon, U. S. Army, is constituted to meet in New York city on the 27th day of March, 1893, or as soon thereafter as practicable, for the examination of candidates for admission to the Medical Corps of the Army, and for such other business as may be brought before it.

Leave of absence for one month, with permission to apply for an extension of one month, is granted 1st Lieutenant Charles Willcox, Assistant Surgeon.

Captain Paul Shillock, Assistant Surgeon U. S. Army, promoted as such to date from January 31, 1893, in accordance with the act of June 23, 1874.

By direction of the Secretary of War, the order assigning Capt. Charles B. Ewing, Assistant Surgeon, U. S. Army, to duty as Post Surgeon, Fort McHenry, Md., is suspended until June 1, 1893, when he will comply with the order.

The leave of absence granted Captain Junius L. Powell, Assistant Surgeon, U. S. Army, is hereby extended one month.

To the Inauguration Via B. & O. R. R.

The Baltimore and Ohio Railroad announces that on the occasion of the Inauguration of Cleveland and Stevenson on March 4th it will sell excursion tickets to Washington and return at low rates. Tickets reading via the B & O. will be on sale at its own offices and at the offices of the principal railroad companies throughout the country. Tickets will be sold March 2d, 3d and 4th, and will be good for return journey until March 7th inclusive. For information in detail concerning time of trains, rates of fare, etc., address C. P. Craig, Gen'l Eastern Passenger Agent, 415 Broadway, New York; A. J. Simmons, New England Passenger Agent, 211 Washington Street, Boston, Mass., or James Potter, District Passenger Agent, 833 Chestnut Street, Philadelphia, Pa.

CALENDAR OF MEDICAL SOCIETIES.

ASSOCIATION.	PRESIDENT.	SECRETARY.	PLACE AND TIME.
NATIONAL.			
Am. Academy.....	J. E. Emerson, Detroit.....	C. McIntyre, Easton, Pa.....	Milwaukee, June 5, 1893.
Am. Anatomists.....			
Am. Andrological.....	E. R. Palmer, Louisville.....	J. A. Fordyce, New York.....	Harrogate, Tenn., June 20, '93
Am. Climatological....	G. T. Jackson, New York.....	G. H. Fox, New York.....	Milwaukee, Sept. 5, 1893.
Am. Dermatological....			
Am. Gynecological.....	T. Parvin, Philadelphia.....	H. C. Coe.....	Philadelphia, May 12, 1893.
Am. Health Resort.....			
Am. Laryngological....	C. H. Knight, New York.....	M. J. Asch, New York.....	New York, May, 1893.
Am. Medical.....	Hunter McGuire Richmond..	W. B. Atkinson, Philadelphia	Milwaukee, June 6, 1893.
Am. Medico-Psychol'..	J. Curwin, Warren, Pa.....	H. M. Hurd, Baltimore.....	Chicago.
Am. Neurological.....			
Am. Obstetricians.....	L. S. McMurtry, Louisville....	W. W. Potter, Buffalo.....	Detroit, June 1.
Am. Ophthalmological..	S. B. St. John, Hartford.....	H. Derby, Boston.....	New London, Conn., July 20.
Am. Orthopedic.....	J. J. Steele, Louisville.....	J. Ridlon, Chicago.....	St. Louis, Sept. 19.
Am. Otological.....			
Am. Pædiatric.....			
Am. Physiological.....	A. L. Loomis, New York.....	H. Hun, Albany.....	Washington, May 30.
Am. Physicians.....			
Am. Public Health....			
Am. Railway Surgeons..	C. W. P. Brock, Richmond....	E. R. Lewis, Kansas City....	Omaha, June.
Am. Rhinological.....	E. K. Lewis, Indianapolis....	R. S. Knode, Omaha.....	Indianapolis, Oct., 1893.
Am. Surgical.....			
Mississippi Valley....	R. S. Satton, Pittsburg....	C. A. L. Fitzpatrick.....	Indianapolis, Oct., 12, 1893.
Pan-Am. Congress....	W. Pepper, Philadelphia.....	C. A. L. Reed, Cincinnati....	Washington, Sept. 5, 1893.
STATE.			
Alabama.....	J. T. Searcy, Tuscaloosa.....	T. A. Means, Huntsville	Tuscaloosa, April 8.
Arizona.....	J. Miller, Phoenix.....	J. T. Green, Tucson.....	
Arkansas.....	J. T. Jelks, Hot Springs.....	L. P. Gibson, Little Rock....	Little Rock, June 2, 1893.
California.....	W. E. Taylor, San Francisco.	W. W. Kerr, San Francisco...	San Francisco, April 18, 1893.
Colorado.....	W. E. Wilson, Denver.....	H. S. Lobinger, Denver.....	Denver, June 15, 1893.
Connecticut.....	C. B. Newton, Stafford Spr'gs	N. E. Worden, Bridgeport....	Hartford, May 24, 1893.
Dakota, North.....	A. P. Rounsseville, Larim're	D. S. Moore, Jamestown.....	Jamestown, May 25, 1893.
Dakota, South.....	A. L. Peepman, Parker.....	R. C. Warne, Mitchell.....	Huron, June 4, 1893.
Delaware.....	E. W. Cooper, Camden.....	W. C. Pieres, Wilmington....	Rehoboth, June 13, 1893.
Florida.....	S. Stringer, Brookville.....	J. H. Douglass, Jacksonville.	Jacksonville, April 4, 1893.
Georgia.....	A. H. Smith, Hawkinsville...	D. H. Howell, Atlanta.....	Americus, April 21, 1893.
Idaho.....			
Illinois.....	E. F. Ingals, Chicago.....	D. W. Graham, Chicago.....	Chicago, May 16, 1893.
Indiana.....	G. F. Beasley, Lafayette.....	E. S. Elder, Indianapolis....	Indianapolis, May 9, 1893.
Indian Ty.....	D. Bagley, Vinita.....	H. B. Smith, McAlester.....	Atoka, June 5, 1893.
Iowa.....	C. M. Hobby, Iowa City.....	C. S. Chase, Waterloo.....	Des Moines, May 18.
Kansas.....	F. F. Dickman, Ft. Scott....	G. C. Purdue, Wichita.....	Topeka, May, 1893.
Kentucky.....	A. Dixon, Henderson.....	Steele Bailey, Stanford.....	Frankfort, May 3, 1893.
Louisiana.....	S. E. Archenard, N. Orleans.	P. B. McCutcheon, N. Orlean	New Orleans, May 9, 1893.
Maine.....	A. H. Mitchell, Brunswick...	C. D. Smith, Portland.....	Portland, June 14, 1893.
Maryland.....	L. McLane Tiffany, Balti're..	G. L. Taneyhill, Baltimore...	Baltimore, April 25.
Massachusetts.....	J. C. White, Boston.....	F. W. Goss, Roxbury.....	Boston, June 13, 1893.
Michigan.....	G. V. Chamberlain, Flint....	C. W. Hitchcock, Detroit....	Muskegon, May 11, 1893.
Minnesota.....	A. W. Abbott, Minneapolis...	C. B. Wetherle, St. Paul....	Minneapolis, June 21.
Mississippi.....	W. Kiger, Vicksburg.....	H. H. Haralson, Meridian...	Jackson, April 18.
Missouri.....	A. B. Miller, Mazon.....	F. R. Fry, St. Louis.....	Sedalia, June 20.
Montana.....	W. Trearoy, Helena.....	Dr. Ellis, Butte.....	Great Falls, April 19.
Nebraska.....	M. L. Hildreth, Lyons.....	G. W. Wilkinson, Omaha....	Nebraska City, May, 1893.
Nevada.....			
New Hampshire.....	M. W. Russell, Concord.....	G. P. Conn, Concord.....	Concord, June 20.
New Jersey.....	G. T. Welsh, Passaic.....	W. Pierson, Orange.....	Spring Lake, June, 1893.
New Mexico.....		M. F. Desmaris, Las Vegas...	
N. Y. Association.....	S. W. McLeod, New York.....	E. D. Ferguson, Troy.....	New York, Oct. 19, 1893.
N. Y. Society.....	L. S. Pilcher, Brooklyn.....	F. C. Curtis, Albany.....	February 7, 1893.
North Carolina.....	J. W. McNeill, Fayetteville..	R. B. Jewett, Wilmington...	Wilmington, May 7.
Ohio.....	D. P. Allen, Cleveland.....	T. V. Fitzpatrick, Cincinnati	Put-in-Bay.
Oklahoma.....	C. B. Bradford.....	Loss Walker, Oklah'a City...	
Oregon.....	W. E. Rinehart.....	C. H. Wheeler, Portland....	
Pennsylvania.....	H. L. Orth, Harrisburg.....	W. B. Atkinson, Philadelphia	Williamsport, May 16, 1893.
Rhode Island.....	W. H. Palmer, Providence....	W. R. White, Providence....	Providence, June 2.
South Carolina.....	W. H. Narien, Anderson.....	W. P. Porcher, Charleston...	Sumter, April 3, 1893.
Tennessee.....	C. W. Beaumont, Clarksville..	D. E. Nelson, Chattanooga...	Nashville, April 11, 1893.
Texas.....	J. W. Osborne, Cleburne....	H. A. Weston, Galveston....	Galveston, May 2, 1893.
Utah.....			
Vermont.....	J. W. Jenne, St. Louis.....	D. C. Hawley, Burlington...	Montpellier, Oct. 14, 1893.
Virginia.....	H. M. Nash, Norfolk.....	L. B. Edwards, Richmond....	Charlottesville, Oct., 1893.
Washington.....	N. F. Essig, Spokane.....	O. G. Shaver, Tacoma.....	
West Virginia.....	D. P. Morgan, Clarksburg....	D. Mayer, Charlestown.....	Parkersburg, June, 1893.
Wisconsin.....	B. T. Phillips, Menominee...	C. S. Sheldon, Madison.....	Milwaukee, May 3, 1893.
Wyoming.....			